US Army Corps
of Engineers
Construction Engineering
Research Laboratories

AD-A283 598

USACERL Technical Report EC-94/04
March 1994

Evaluating the Degree of Annoyance Caused by Military Noise

Results of Tests Done at Munster, Federal Republic of Germany

by
Paul D. Schomer
L. Ray Wagner
L. Jerome Benson
U. S. Army Construction Engineering Research Laboratories

Edmon Buchta
Karl-Willhelm Hirsch
Detlef Krahé
Institute für Lärmschutz

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Results showed that real sounds in real settings yield results different from artificial sounds in laboratory settings. The sound of a vehicle passing, measured near a subject's ears, differs in annoyance from an equivalent computer-generated pink-noise sound by 10 db or more. Compared to real, tracked vehicles, small arms also seem to fit an equal energy model and require penalties on the order of zero and 80 dB, respectively. Blast noise does not appear to fit an equal energy model. A 1-dB increase in blast C-weighted sound exposure level (CSEL) is equivalent to a 2-dB increase in the sound level of noncommon sound sources such as vehicles.

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave Blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	March 1994	Final

4. TITLE AND SUBTITLE
Evaluating the Degree of Annoyance Caused by Military Noise

5. FUNDING NUMBERS
4A162720
A896
NN-TG1

6. AUTHOR(S)
Paul D. Schomer, L. Ray Wagner, L. Jerome Benson, Edmon Buchta, Karl-Willhelm Hirsch, and Detlef Krahé

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Construction Engineering Research Laboratories (USACERL)
P.O. Box 9005
Champaign, IL 61826-9005

8. PERFORMING ORGANIZATION REPORT NUMBER
EC-94/04

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Office of the Chief of Engineers
ATTN: ENVR-E
Room 1E685, The Pentagon
Washington, D.C. 20310-2600

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Copies are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

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Results showed that real sounds in real settings yield results different from artificial sounds in laboratory settings. The sound of a vehicle passing, measured near a subject's ears, differs in annoyance from an equivalent computer-generated pink-noise sound by 10 db or more. Compared to real, tracked vehicles, small arms also seem to fit an equal energy model and require penalties on the order of zero and 80 dB, respectively. Blast noise does not appear to fit an equal energy model. A 1-dB increase in blast C-weighted sound exposure level (CSEL) is equivalent to a 2-dB increase in the sound level of noncommon sound sources such as vehicles.

14. SUBJECT TERMS
blast noise
noise measurement
noise assessment procedures
Munster, Federal Republic of Germany

15. NUMBER OF PAGES
374

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	SAR

Foreword

This study was conducted for Office of the Chief of Engineers (OCE) under Project 4A162720A896, "Environmental Quality Technology;" Work Unit NN-TG1, "DOD Noise Source Human Response Characterization." The technical monitor was LTC Graven, ENVR-E.

The work was performed by Environmental Compliance and Modeling Division (EC), Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL) jointly with the German Federal Ministry of Defense (FMOD). The Institute for Noise Pollution (Institute für Lärmschutz [IFL]) served as contractor to FMOD. The USACERL principal investigator was Dr. Paul D. Schomer. Special thanks is expressed to Mr. Johann Kubat, Staatshochbauamt Bergen, and Mr. Marx, Staatshochbauamt Munster, whose professional assistance made it possible to conduct this study. Dr. John Bandy is Chief, CECER-EC and Dr. Michael J. O'Connor is Chief, CECER-FL. The USACERL technical editor was William J. Wolfe, Information Management Office.

LTC David J. Rehbein is Commander, USACERL, and Dr. L.R. Shaffer is Director.

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1 Introduction

Background

Proper assessment of the noise created by Army testing and training remains a question that is not fully answered (Schomer and Averbuch, August 1989; Schomer, December 1991; Schomer and Neathammer, April 1987; and Schomer, January 1986). The most difficult noises to assess are the impulsive noises generated by large weapons, small arms, and helicopters (Sutherland, November 1979). These noises are more difficult to assess than general community noise because their impulsive character adds to the annoyance that they generate. The nature of this "addition" is not well understood. Currently, general community noise is assessed using the A-frequency weighting and some form of "energy equivalent" level (American National Standard, 1988; American National Standard, 1990). In the United States, the day-night average sound level (DNL) is used. For clearly impulsive sound, adjustments or "penalties" are sometimes added to the formulation to account for the increase in annoyance generated by the impulsive character of the sound (International Organization for Standardization, 1990).

Adding a penalty is current practice for small arms and helicopter noise (Air Installations Compatible Use Zones, November 1977; Army Regulation (AR) 200-1, April 1990). Blast noise, which is one form of high-energy impulse noise, is assessed using the C-weighting, and, in the United States, the (C-weighted) day-night average sound level (CDNL) is currently used as the fundamental unit of assessment (American National Standard, 1986). Since the day-night average is retained for blast noise, converting from A- to C-weighting is equivalent to adding about a 20 dB penalty (Schomer et al. 1978). But the criteria levels are also changed, and this change is, in effect, like adding a DNL-dependent penalty of up to 5 dB. As yet, precise values for these penalties still need to be determined.

Over the past several years, the U.S. Army Construction Engineering Research Laboratories (USACERL) has performed a series of experiments that have had two purposes: (1) to better determine penalties for impulsive sound sources like helicopters and small arms, and (2) to better understand human and community response to blast sound. These experiments differ from other research in that they

use subjects placed in real houses, judging real test sounds generated during the experiment, outdoors, at realistic distances from the test houses. These experiments have been performed as paired-comparison tests. Artificial noise generated through a loudspeaker in the subject test rooms has been the control sound.

These impulsive noise sources are problems worldwide and not just in the United States, so some tests have been performed jointly with researchers in other countries with the experiment actually conducted in that country. Helicopter tests have been performed in Champaign, IL (Schomer and Neathammer, April 1987) and Tustin, CA (Schomer, Hoover, and Wagner, 1991). Blast noise tests have been performed in Grafenwoehr Germany (Schomer, Buchta, and Hirsch, 1991) and Aberdeen Proving Grounds (APG), MD.* Initial vehicle and small arms tests have also been conducted at Aberdeen. This current test is a joint German/American study performed in Germany.

Objectives

The purpose of the present test was (1) to further define and develop adjustments or "penalties" that can be used to assess military noise vis-a-vis normal, urban noises and (2) to develop a better understanding of community response to blast noise. In particular, this study concentrates on blast, small arms, and tracked-vehicle sounds. (The tracked vehicles are tanks and infantry fighting vehicles.)

Approach

This test follows the paired-comparison methods developed and used by USACERL for the past several years, but it adds a new dimension in paired comparison testing. This test maintains the use of real houses with real test sources of sound. Small arms are fired to create small arms sound; tanks drive by the houses to create tracked-vehicle sound; and plastic explosives are set off to create blast sound. But an innovation has been added to this test. Instead of just using control sounds that are electrically generated through loudspeakers in each test room, this test also uses real, wheeled vehicles as a source of control sound. Six sizes of wheeled vehicles were used to create six levels of control sound. The

* New blast tests of window attenuation at Aberdeen Proving Ground. Only old windows have been tested to date, therefore results cannot yet be published.

subjects heard and compared the sound of a truck driving by to a burst of small arms fire, to an explosive sound, or to a tank driving by (at a further distance).

This study was performed at the German Army base at Munster. This was a joint project of the U.S. Army and the German Federal Ministry of Defense (FMOD). The Institute for Noise Pollution (Institute für Lärmschutz) (IFL) served as contractor to FMOD. USACERL provided most of the indoor and some of the outdoor acoustical measurements, control and supervision of the sources of sound, and overall conduct of the experiment. Separately, IFL provided outdoor and some indoor acoustical measurements; hiring and supervision of subjects; vehicles and munitions to create the test sounds; and renovation and repair of the test houses. Dr. Buchta and Dr. Hirsch, of the FMOD, suggested the innovation of using wheeled vehicles as a control sound.

Data analysis has been accomplished in parallel in Germany and the United States. The German analysis has concentrated on fitting curves to small group, pooled responses and corresponding energy-average acoustical data; the U.S. analysis has concentrated on larger group, pooled responses and the same energy average data. Both results are based on maximum likelihood estimation and use transitional curve fitting with a cumulative distribution, sigmoid, or logit function, and both analyses yield virtually identical results. The U.S. analysis is described in this paper, but both sets of results are reported and averages of the two are used for purposes of discussion and development of conclusions.*

Mode of Technology Transfer

These data will be used to help set joint North Atlantic Treaty Organization/Command Control and Monitor System (NATO/CCMS) noise assessment procedures and criteria. They will be used in the United States to help reformulate National Academy of Science (NAS) recommendations. In turn, these NAS reports will influence American National Standards Institute (ANSI) Standards and Army policy.

* A separate report will be issued in German by FMOD.

2 General Study Concepts

The study was designed as a paired comparison test where the subjects were presented pairs of sounds and asked, for each pair, which was more annoying, the first or the second sound. For this study, the test sound was one of three categories of military sounds that came from: (1) tracked vehicles, (2) small arms fire, or (3) large blasts. The other sound in a pair was one of two control sounds, which were: (1) the sound of a wheeled vehicle passing by, or (2) a computer-generated white noise. Either the test sound or the control sound was presented first; the order was random, but balanced. This study used juries of subjects placed in adjacent rooms on the front side of the test house, or, in the later stages of the test, at an outdoor location that was in line with the other test rooms.

Figure 1 shows a hypothetical curve expected from the experiment for a single military source. The theoretical curve assumes a transitional shape in the general form of a sigmoid or Gaussian cumulative probability curve. When the control is very quiet, 100 percent of the subjects will find the test source more annoying; when the control is very loud, all the subjects will find the control more annoying.

Many actual curves of the type indicated in Figure 1 were generated; each yields a pair of numbers: a military test sound exposure level (SEP) (A-weighted for all sounds except blast sound) and corresponding control sound A-weighted sound exposure level (ASEL). This pair of levels (point) occurs when 50 percent of the subjects perceived the test sound to be more annoying than the control sound and 50 percent perceived it to be less annoying. This 50 percent point is marked on Figure 1. This point is taken as the equivalency point, that is, the point where the test sound causes the same annoyance as the control sound. The number of decibels that the test sound differs from the control sound is the "offset" or "adjustment." This is the decibel difference between the test sound SEL and the control sound ASEL for equivalent annoyance. For the hypothetical example in Figure 1, the military test sound was generated by a blast and had a C-weighted SEL (CSEL) of 91 dB; the equivalent wheeled-vehicle control sound ASEL is 77 dB at the 50 percent point. So a 14 dB offset or "penalty" must be added to the test

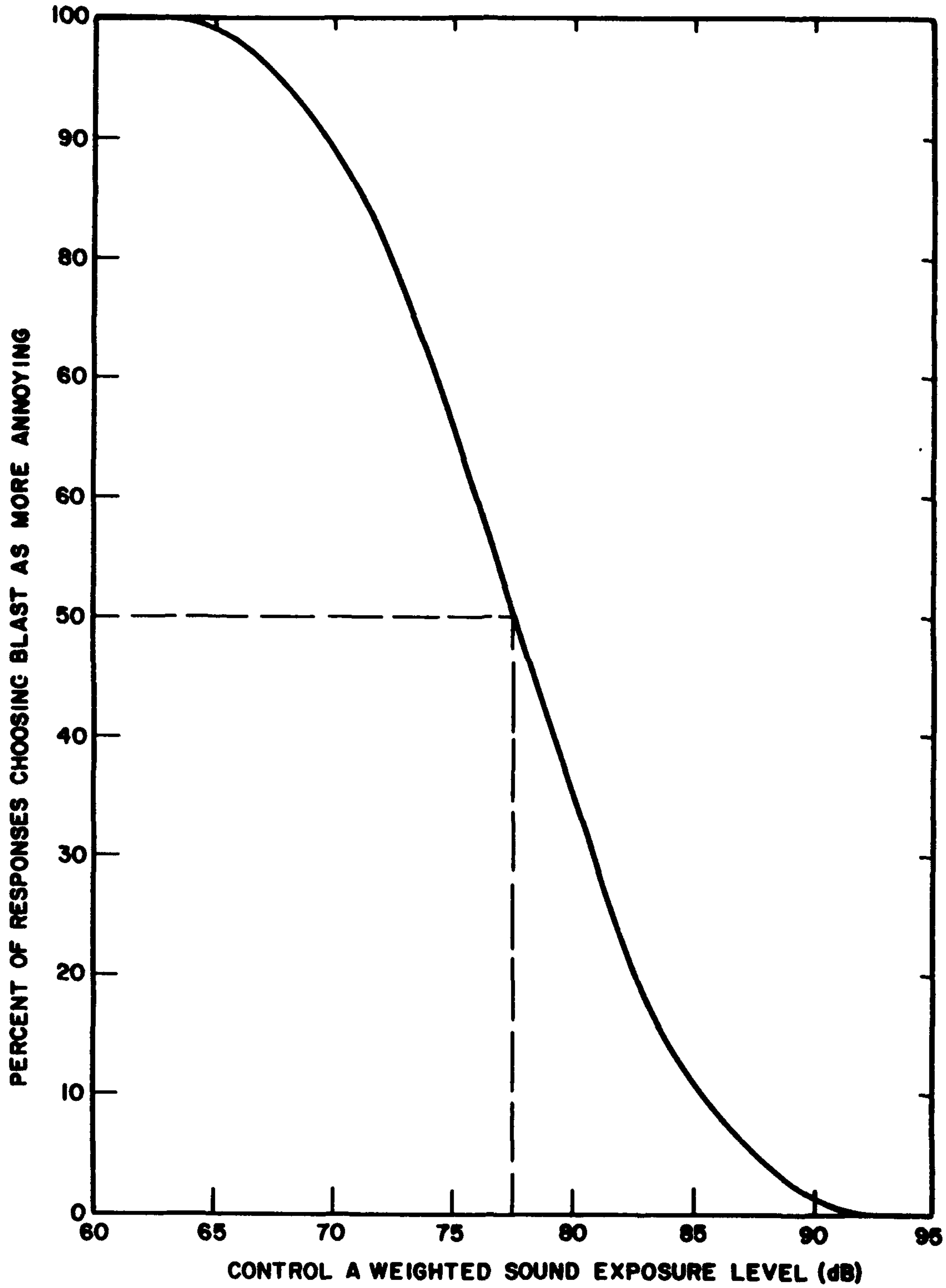


Figure 1. Typical curve expected for a single test sound source and a range of control sound levels.

sound CSEL to make it equivalent to a control sound generating the same annoyance. In this example, the penalty is negative; it is a bonus.

In this hypothetical example, the Leopard II is compared with wheeled-vehicle control sounds. The "equivalency" point is when the Leopard II had an indoor-measured ASEL of 62 and the equivalently annoying control vehicle ASEL was 59. This indicates that in terms of decibels, the Leopard II creates "3 dB" less annoyance that an equivalent wheeled vehicle; it has a "negative penalty."

The tracked vehicles consisted of a Leopard II main battle tank and a Marder armored personnel carrier (Figures 2 and 3). Both vehicles were driven forward and reverse during the test to avoid the additional noise of turning around or returning to a single starting point, since this extraneous noise could have affected the subject responses when other study sounds were present. The direction these vehicles faced and the end of the travel path at which they started were changed from test to test to obtain all possible combinations.

The small arms were 7.62 mm German G3 rifles fired from two distances: a "near" and "far" distance, which were respectively 125 and 200 meters from the test house. For safety reasons, only blank ammunition could be used. Two different firing rates were used at the near site. A rate of 60 rounds in 30 seconds was used at both sites throughout the entire study. In addition, a rate of 6 shots in 3 seconds was used at the near site in sets 1 through 5, and a 10 times slower rate of 6 shots in 30 seconds was used in sets 6 through 10. This change was done to test differing hypotheses on how people temporally integrate sound in terms of annoyance. Figure 4 shows soldiers at the near gun fire site.

The primary blast site was located 1 km from the test house. A secondary site, located 1.8 km from the test house, was used to lower the received blast sound levels when weather conditions were such that the primary site produced levels that were too high. Nominally, large and small blast charge sizes of 2 kg and 500 g were used, but these were changed (e.g., up to 4 kg or down to 1 kg for the large blast) when needed to get received, flat-weighted peak levels that were as close as possible to 121 dB and 115 dB for the large and small blast, respectively.

The control vehicles, except for the smallest, were supplied by the German Army and consisted of six wheeled vehicles. These vehicles generated sound levels that ranged from about 65 to 95 ASEL (in roughly 5 dB steps) at a free-field (no reflecting surface) microphone in line with the front face of the test house. For

Figure 2. Leopard II tank.

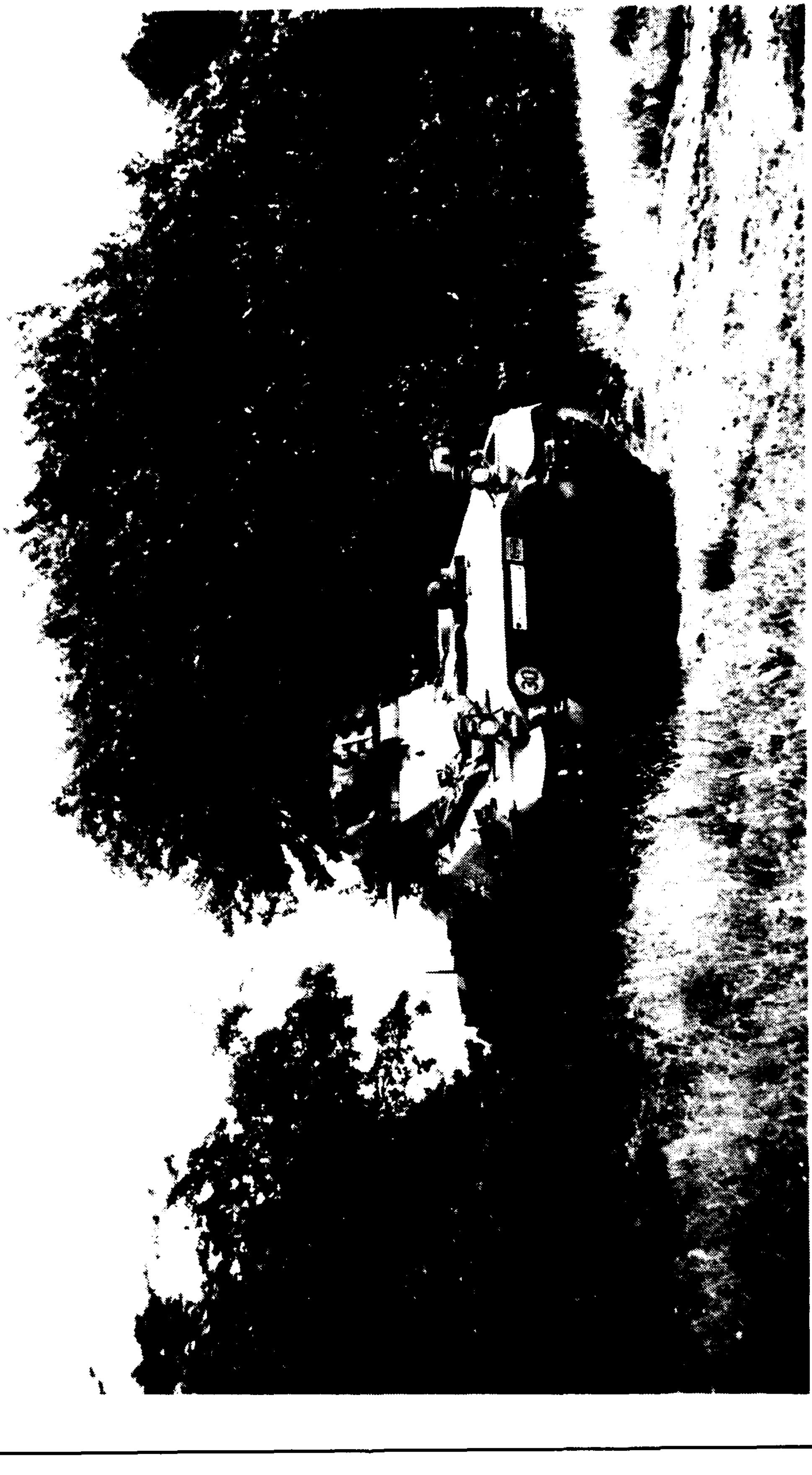


Figure 3. Marder infantry fighting vehicle.

Figure 4. Soldiers at the near gun fire site.

ease of designation, these vehicles were designated V1 through V6 with V1 being the loudest. According to this scheme, V1 was a tank transport truck, V2 was a large tow truck, V3 was a bus, V4 was a 2-ton cargo truck, V5 was a diesel jeep, and V6 was a gas engine passenger van. Figures 5 through 10 respectively show these six vehicles. The test house can be seen in the background of some of these photographs. All of the wheeled vehicles passed by the test house west to east at the same distance, then looped back on an alternate, more distant road.

The tracked and wheeled vehicles were run on two different roads. Vehicles 1 through 6 were run on a long-existing graded dirt road 20 m from the front of the house, while the tracked vehicles ran on a new dirt road, graded from a farm field, approximately 170 m from the front of the house. Figure 11 shows the relationship of these roads and the blast and small arms sites.

The computer-generated control sound had a "haystack" temporal amplitude-envelope pattern with the final shape being determined by the military sound being tested. For the tracked vehicles and small arms fire, a 500 Hz octave band of pink noise was used as the control sound; for the blast sounds, a 200 to 1500 Hz band of white noise was used as the control sound. The blast control sound was identical to the control sound used in previous test situations at Aberdeen Proving Ground,* Grafenwöhr Training Area (GTA) (Schomer, Buchta, and Hirsch, 1991), and USACERL (Schomer and Averbuch, 1989).** To mimic the temporal pattern of the sources, the pink noise was presented for almost 30 seconds and the white noise for less than 1 second.

The wheeled-vehicle and pink/white-noise control sounds were intermixed throughout the test. All of the seven military test sounds were compared with wheeled-vehicle control sounds. The three louder military sources, which were the large blast, the Leopard II tank, and the near gun fire (60 shots), were compared with the five louder control vehicles, V1 through V5. The other military sources, which were the small blast, the Marder, the near gun fire (6 shots), and the far gun fire, were compared with V2 through V6. The three louder military sources and control vehicle 2 (V2) were compared with the computer-generated pink/white-noise control sound. There were five different levels of control sound for each

* New blast tests of window attenuation at Aberdeen Proving Ground. Only old windows have been tested to date, therefore results cannot yet be published.

** The tests at USACERL involved artificially generated blast sounds that were created with a giant shake table covered by a heavy membrane.

Figure 5. Control Vehicle 1—tank transport. This figure shows Vehicle 1 just being started on a drive by the USACERL controller.

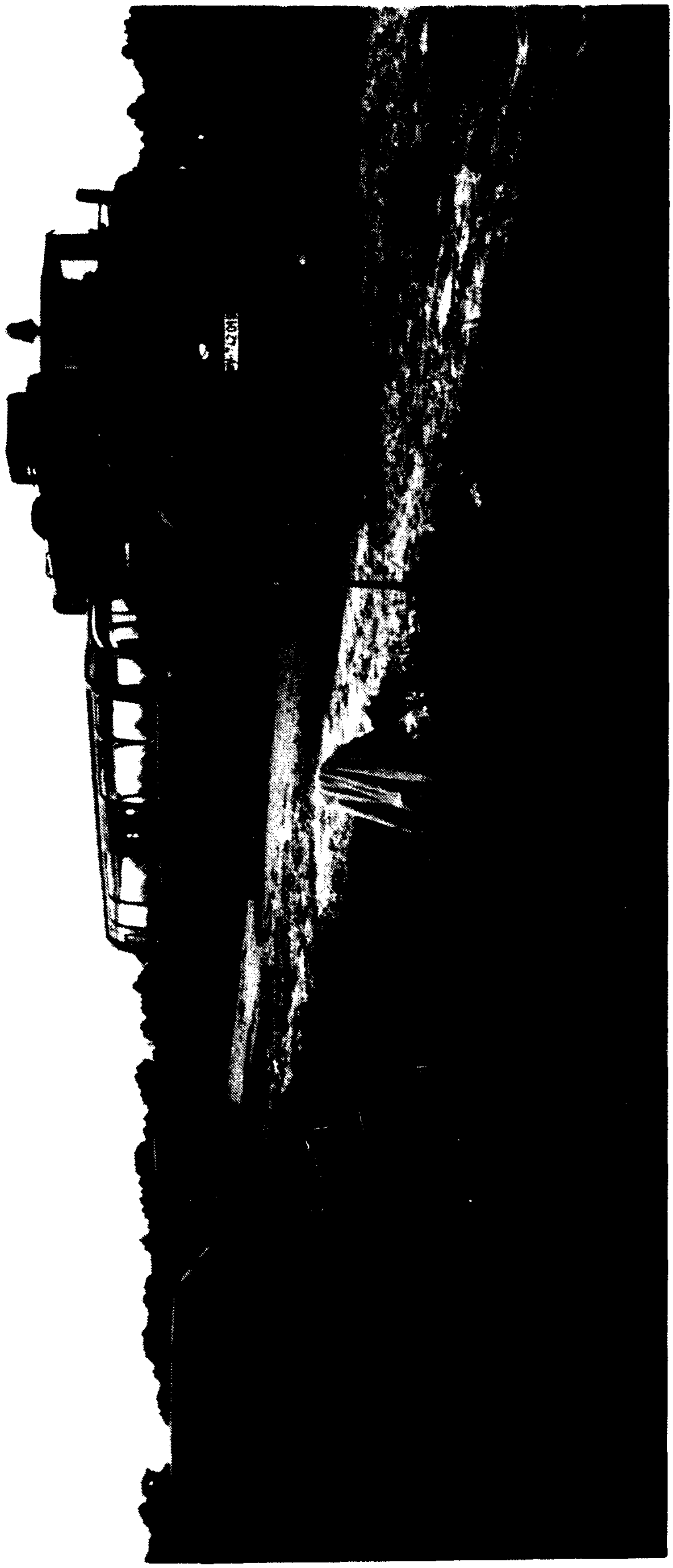


Figure 6. Control Vehicle 2—large wrecker. This figure shows Vehicle 2 just being started on a drive by the USACERL controller. Other vehicles being staged can be seen in the background.

Figure 7. Control Vehicle 3—bus.

Figure 8. Control Vehicle 4—cargo truck.

Figure 9. Control Vehicle 5—diesel "Jeep." The test house can be seen in the background.

Figure 10. Control Vehicle 6—gasoline-engine van. The test house can be seen in the background.

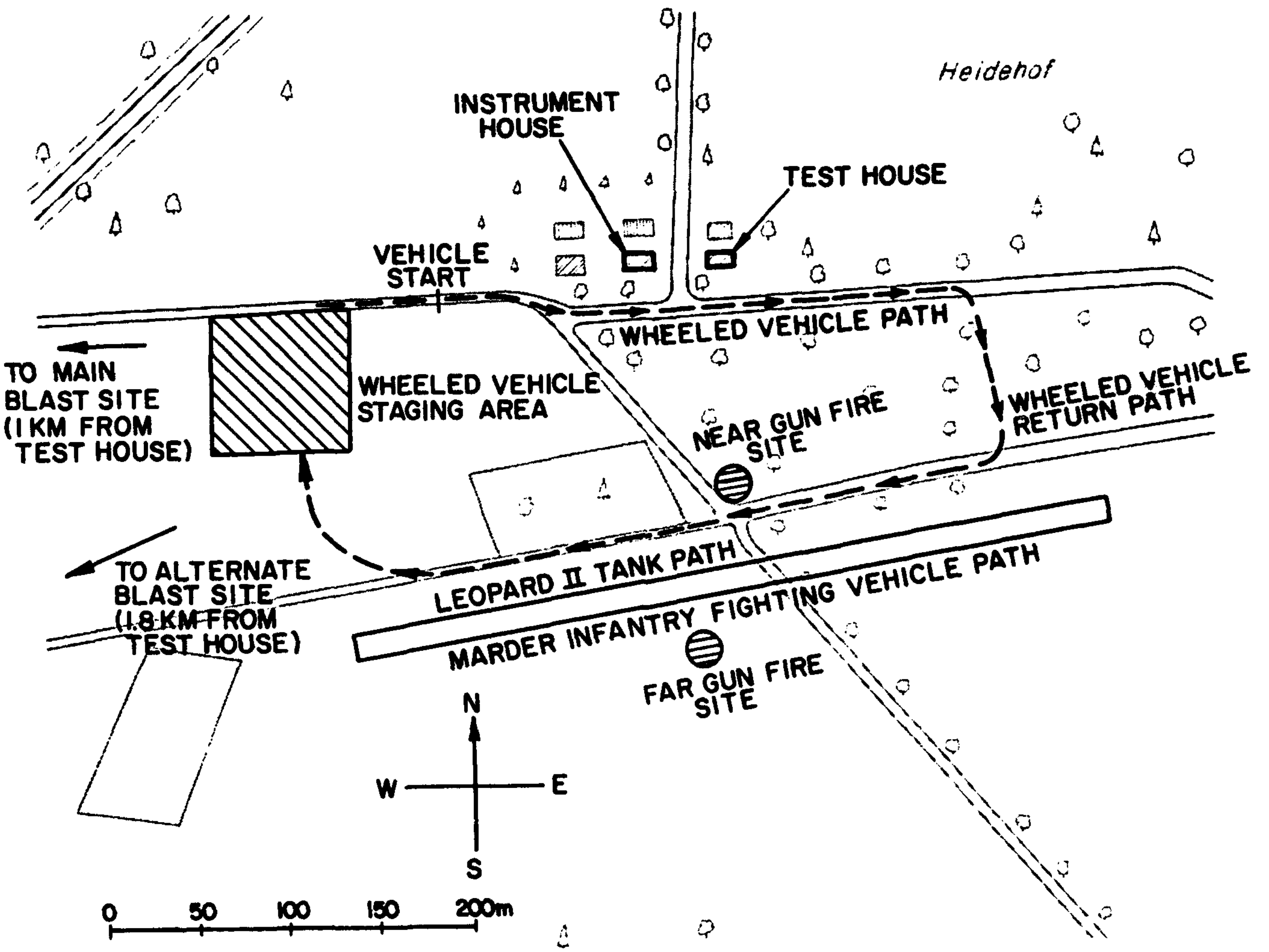


Figure 11. Map of the immediate test site area. This map shows the test house, control house, roads and staging area for the wheeled vehicles, road for the tracked vehicle and the near- and far-gun fires sites. The blast sites were more distant.

source. The test and control sound pairs were intermixed randomly throughout the test. Table 1a lists these test pairings.

As discussed later, the indoor control sounds were presented at 5 dB intervals depending on the sound source they were compared with. For the white/pink noise control sound sources, the control levels were adjusted in ±5 dB steps depending on received test sound levels and the response data already collected. The goal was to have the equivalency point at the middle of the control range, which was the sound level of V3 or V4 for the vehicles and the middle level for the white/pink noise control sounds. The most accurate estimate of a "penalty" possible is provided when the equivalency point lies in the middle of the analysis range. Table 1b lists the actual "base" levels by set. Table 2a lists the actual, outdoor, energy-average sound levels for the control vehicles and the test sounds (except

Test Sound	Control Sound 1	Control Sound 2	Control Sound 3	Control Sound 4	Control Sound 5
Large blast	V1	V2	V3	V4	V5
Small blast	V2	V3	V4	V5	V6
Near gun-60 shots	V1	V2	V3	V4	V5
Near gun-6 shots	V2	V3	V4	V5	V6
Far gun-60 shots	V2	V3	V4	V5	V6
Leopard II	V1	V2	V3	V4	V5
Marder	V2	V3	V4	V5	V6
Large blast	-10 dB White	-5 dB White	Mid white (Large blast)	+5 dB white	+10 dB white
Leopard II	-10 dB Pink	-5 dB Pink	Mid pink (Leopard II)	+5 dB pink	+10 dB pink
Near gun-60 shots	-10 dB Pink	-5 dB Pink	Mid pink (near gun)	+5 dB pink	+10 dB pink
Control vehicle-2	-10 dB Pink	-5 dB Pink	Mid pink (vehicle 2)	+5 dB pink	+10 dB pink

Table 1a. Test sound sources and corresponding control sound sources. For the white/pink noise control sound sources, the control levels were adjusted in ±5 dB steps depending on received test sound levels and the response data already collected.

blast sounds) by study halves.* Since the blast levels changed a lot with weather conditions, Table 2b contains the blast sound levels by set.**

Set Test / Source	1	2	3	4	5	6	7	8	9	10
Large blast	78	75	75	70	70	70	60	60	60	65
Leopard II	60	65	70	70	70	80	75	75	75	75
Near gun-60 shots	60	65	70	70	70	80	75	75	75	75
Control vehicle 2	65	65	70	70	70	80	75	75	75	80

Table 1b. Middle levels for the white/pink noise control sound by set. These were adjusted in ±5 dB steps depending on received test sound levels and the response data already collected. The goal was to have the equivalency point at the middle of the control range which was the sound level of V3 or V4 for the vehicles and the middle level for the white/pink noise control sounds. The most accurate estimate of a "penalty" possible is provided when the equivalency point lies in the middle of the analysis range. (The white noise control level in set 1 was inadvertently off by 3 dB from the planned level.)

* The German researchers, who were responsible for the data analysis, collected these data using a free-field (no reflecting surface) microphone. Their data were consistent with the American data measured at the face of the test house.

** These data were collected by the American microphone located at the front face (middle) of the test house and are also consistent with the free-field data collected by the German researchers.

Sound Source	ASEL (dB) First 5 Sets	ASEL (dB) Second 5 Sets
Near gun - 60 shots	80	83½
Near gun - 6 shots	71	74½
Far gun - 60 shots	69½	72
Leopard II	79½	79½
Marder	72½	73
Control vehicle 1	95	95
Control vehicle 2	86	85
Control vehicle 3	79	78
Control vehicle 4	76	76
Control vehicle 5	71	71
Control vehicle 6	62	61

Table 2a. Outdoor, free-field (no reflecting surface) test and control-vehicle sound levels (ASEL) by test halves. Most sources remained constant throughout the test, but the gun fire levels changed slightly because of the nature of the weapons and the blank ammunition being fired. Since the blast levels changed a lot with weather conditions, Table 2b contains the blast sound levels by set.

		Set									
		1	2	3	4	5	6	7	8	9	10
Large Blast	Peak	120	120	119	124	123	113	116	119	120	126
	CSEL	97	96	96	100	100	89	91	94	96	103
Small Blast	Peak	112	114	112	116	117	104	108	111	113	119
	CSEL	89	91	89	93	94	81	85	88	89	97

Table 2b. Outdoor, large and small blast charge size sound levels (CSEL) by test set.

3 Data Collection

The General Area and Site

The test site was a group of three duplexes in a relatively isolated area surrounded by fields and inactive artillery ranges. The subjects were placed in the eastern most of the three duplexes and occupied four rooms in the front of the duplex. The two halves of the duplex were mirror images so the two inner rooms and the two outer rooms were virtually identical. Each room had two windows with at least one facing the vehicle roads and the small arms firing sites. The subjects sat on chairs and couches located towards the rear of each room; the seat locations were as distant as possible from the wall facing the road and firing sites, the wall containing the front windows. A German test supervisor sat with each test group in each test room. Figure 12 shows the duplex layout. All windows were painted translucent white to prevent the subjects from seeing the vehicles passing by or the rifle sites. Figures 13 and 14 show two duplex test-subject rooms; one view is of subjects and the other is of the front wall, control lights, and loud speakers for generating the pink/white-noise control sound. In the latter part of the study, sets 6 through 10, an outdoor group was located just west of the test house (Figure 12).

The control computer and measurement equipment were located in the adjacent house. This is also where the coordinator of the vehicles, blasts, small arms, and computer-generated sounds was located. Figures 15 and 16, respectively, show the instrument control room including the data collection station, and the test control station.

The Subjects

The subjects were hired and supervised by the German researchers. The subjects came from the local area and represented a reasonable cross section of the general public in terms of age and gender. No subject participated in more than one test. Overall, about 250 different subjects were used for this study.

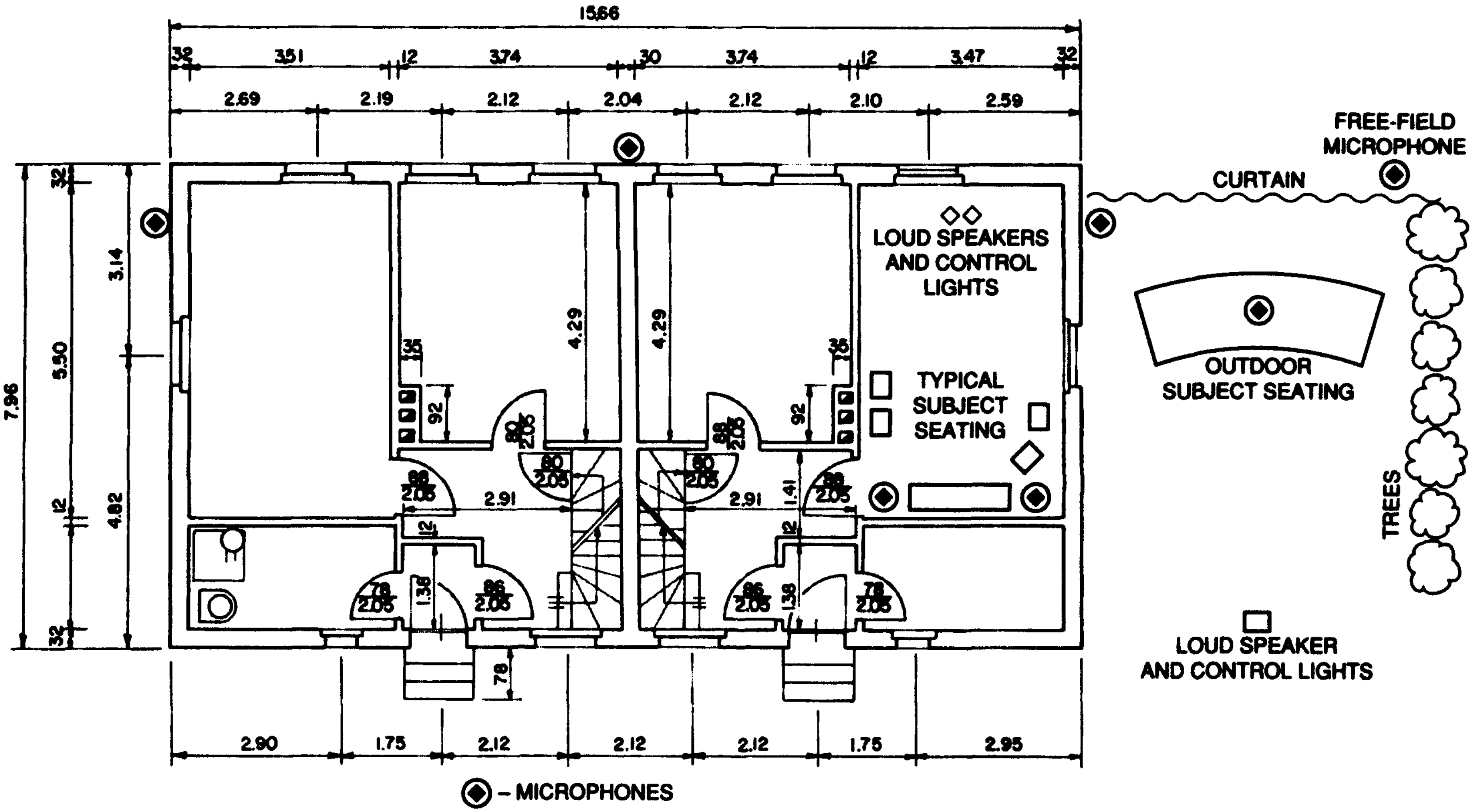


Figure 12. The test house layout. It indicates the location of the subjects and the loud speakers that produced the white/pink noise control sound. It also indicates the location of the four outdoor microphones. Three were located next to the test house (10 cm from the wall surface), and the fourth (free-field) was located 6 m west of the test house and in line with its front face.

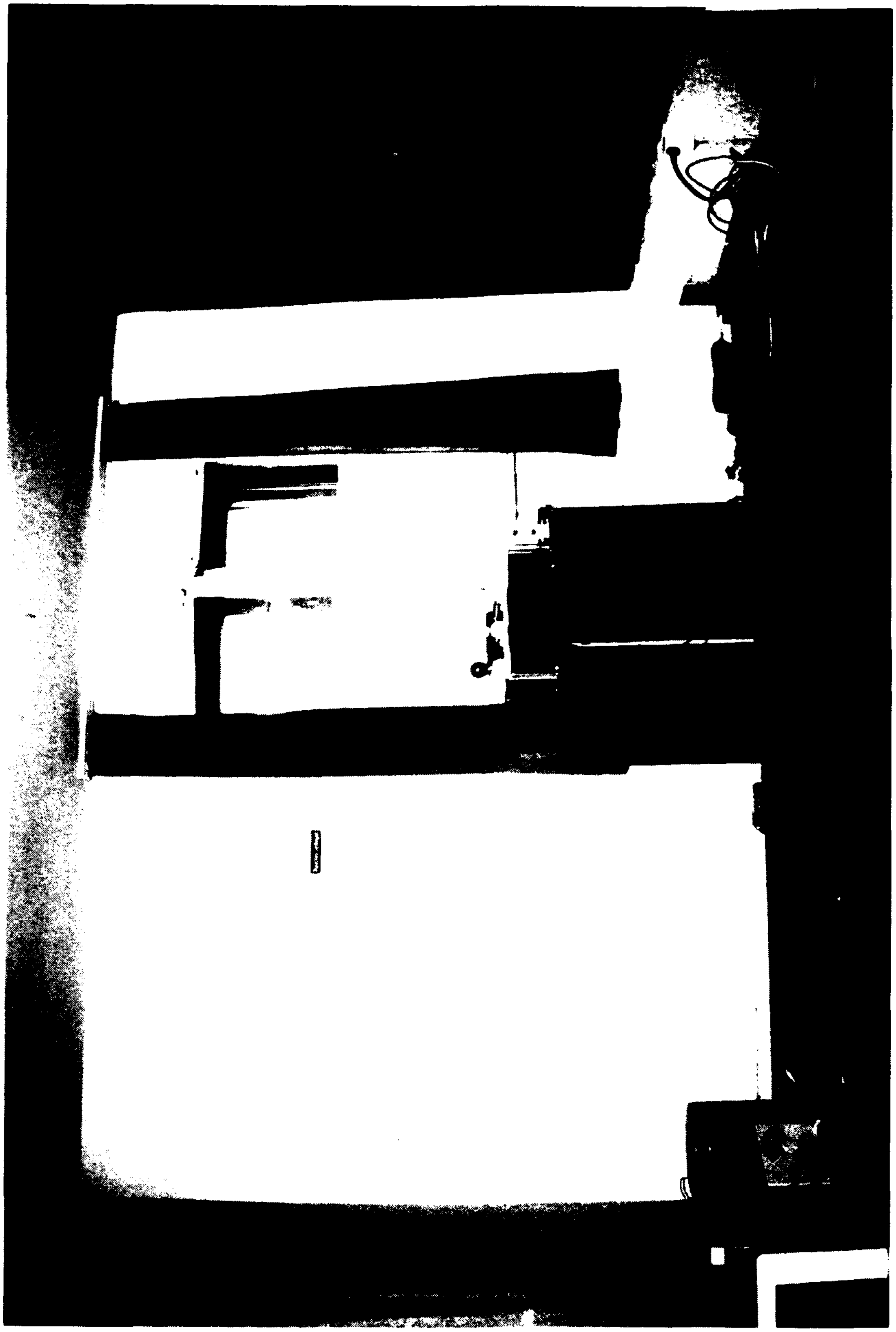


Figure 13. A subject room showing the front wall, control lights, and loud speakers for generating the pink/white-noise control sound.

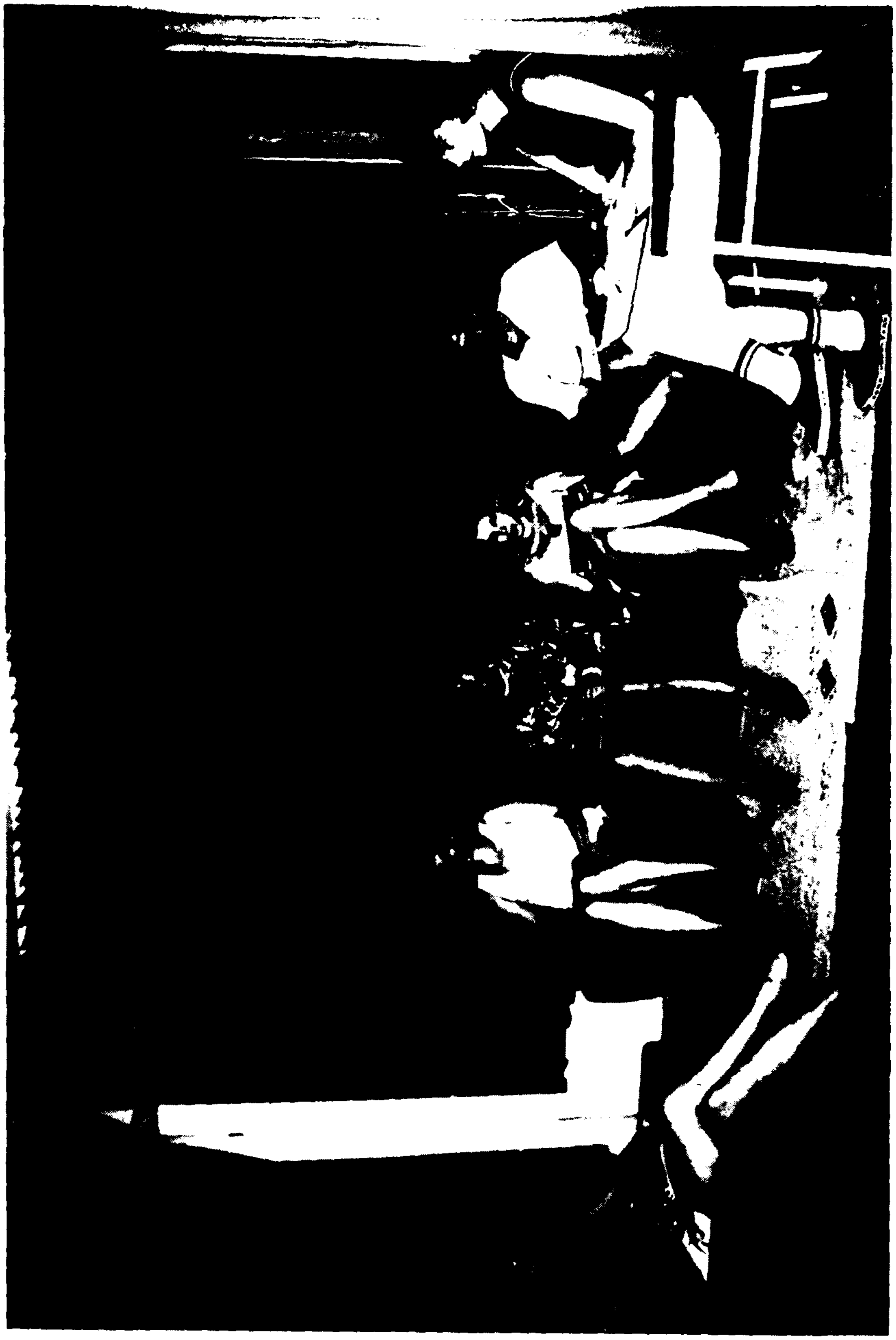


Figure 14. Subjects seated in a test room.

Figure 15. The instrument control room—data collection station.

Figure 16. The instrument control room—test control station.

Acoustical Data Collection

The acoustical measurement devices consisted of indoor and outdoor microphones. Two Brüel and Kjær 4145 "1-in." microphones were placed in each subject room at the subject's ear height and located so as to obtain a good approximation to the stimuli heard by the subjects. These microphone positions (for one of the four test-subject rooms) are marked in Figure 12. In addition, three Brüel and Kjær 4921 outdoor microphone systems were located about 10 cm from the east, west, and south faces of the test duplex. A fourth Brüel and Kjær free-field (no reflecting surface) microphone was located about 6 m west and in line with the front face of the test house. All four outdoor microphones were at a height of about 2 m. (These outdoor microphones are indicated in Figure 12.)

The signals from one of the two microphones in each subject room were passed through a USACERL-developed line driver set to 30 dB gain, while the second microphone had no gain. This combination of gains was used to ensure accurate measurement of both low level (small arms and vehicles) and high level (blast) sounds. For the same reason, the built-in amplifier of the 4921 on the south face of the test house was set to 20 dB of gain while the other two were set to 40 dB. In general, the eight indoor microphones were used to develop estimates of the acoustical levels received by the subjects. Only the four amplified indoor microphones were used for measuring the very low level, far gunfire and vehicle (V6) sounds, and only the four unamplified indoor microphones were used for measuring the very high level blast sounds. With the exception of blast sounds, the free-field microphone was used to obtain the general outdoor sound levels; the microphone on the front face of the test house was used to determine the blast sound levels. When there was an outdoor group (data sets 7 through 10), the microphone normally positioned on the west face of the test house was moved and placed at subject ear height (about 1 m) in the middle of the outdoor subjects and was used to determine the levels received by this outdoor group (Figure 12).

The equipment room (Figure 15) housed all the equipment for analyzing and recording the signals taken from the houses and three outdoor microphones. Both indoor and outdoor signals were recorded on Panasonic model 3500 DAT recorders. They were amplified with a Tektronix AM502 amplifier and analyzed with a USACERL-developed integrating noise monitor and sound exposure level meter (Model 380). Figure 17a shows the American instrumentation.

The German researchers operated two independent microphones with corresponding analysis systems: one microphone outside and one inside. Figure 17b shows a diagram of the German instrumentation.

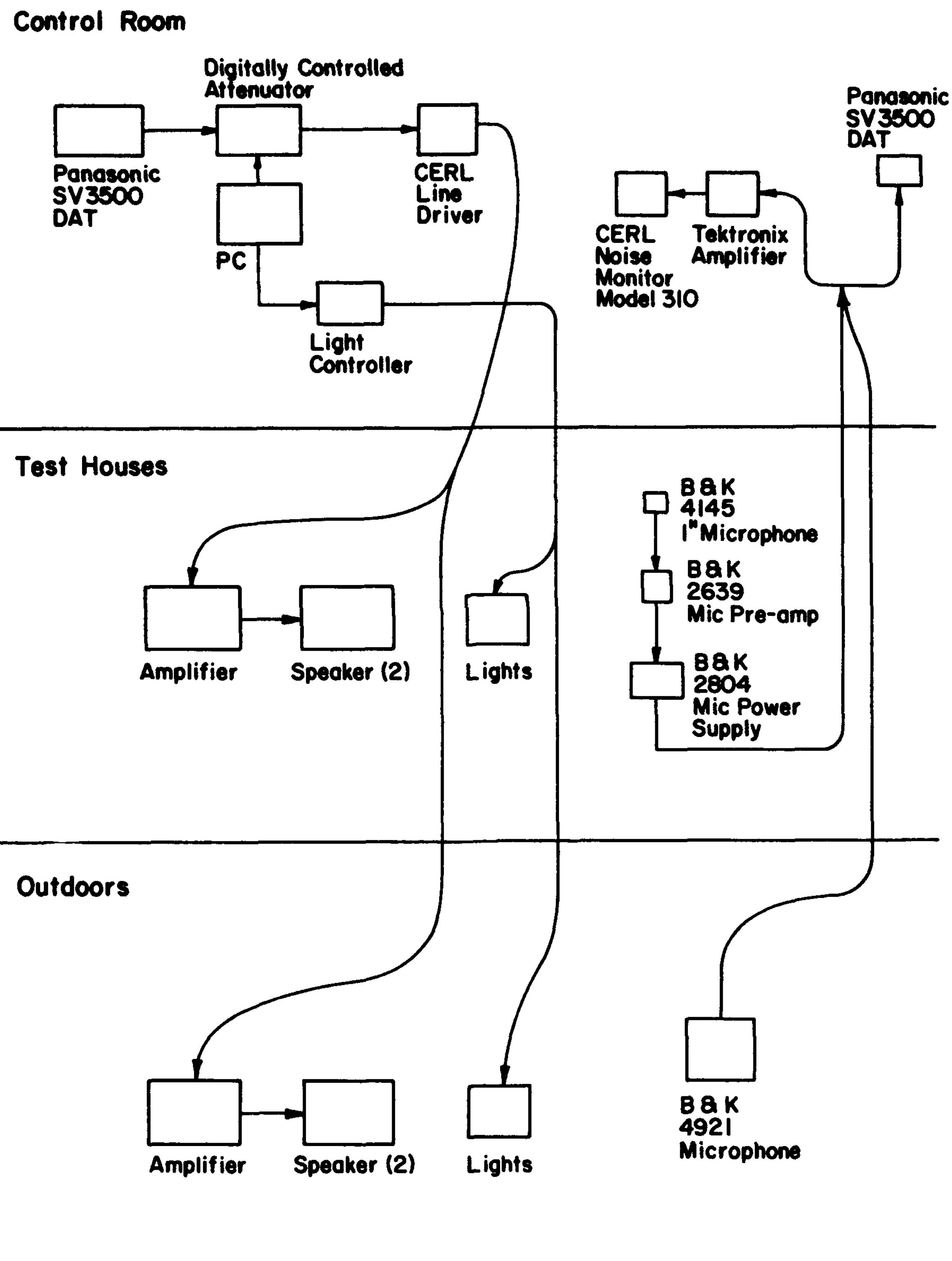


Figure 17a. A schematic representation of the American instrumentation.

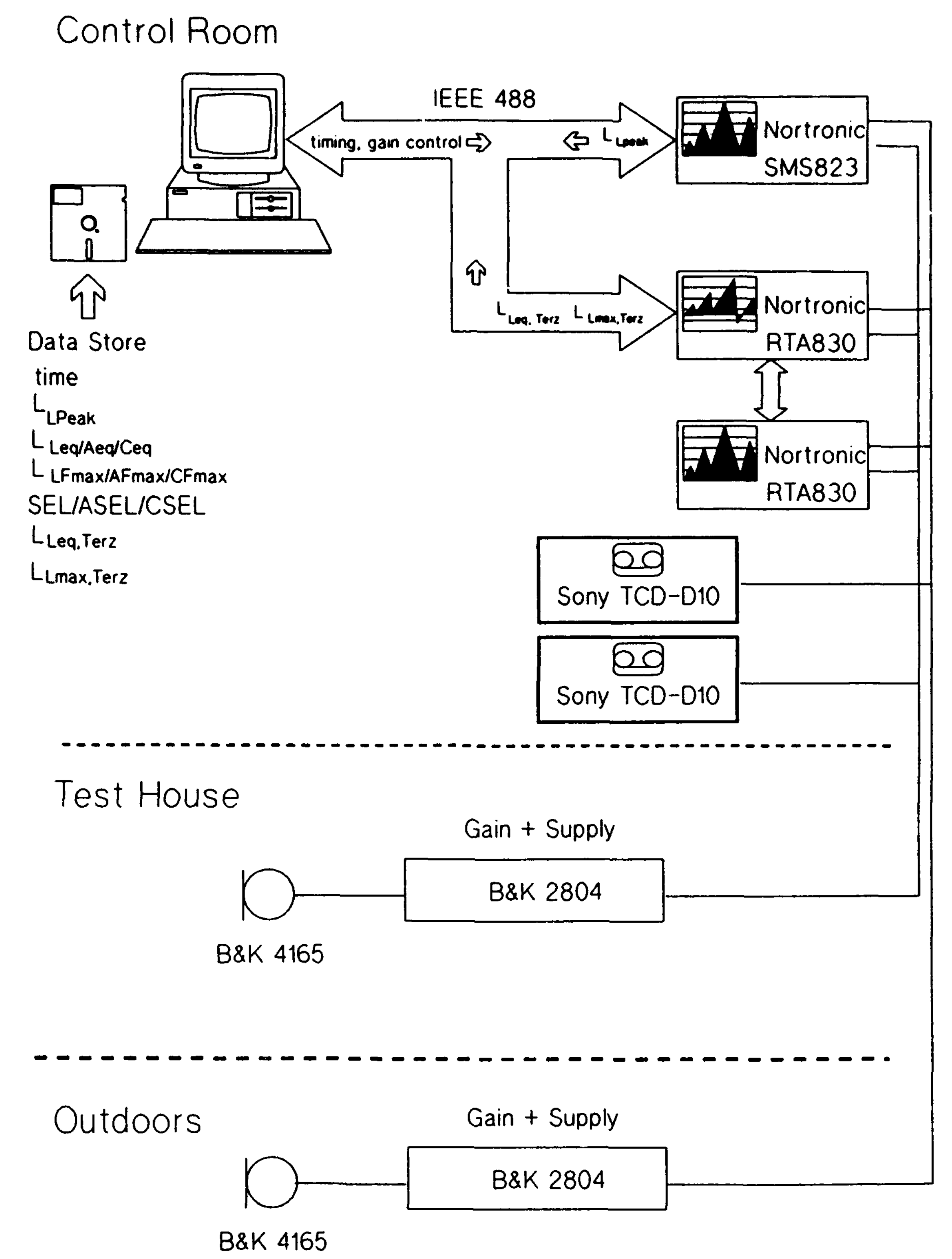


Figure 17b. A schematic representation of the German instrumentation.

Control Sound

A personal computer (Figure 16) was used to regulate the control sound that was compared with each test sound. The starting point in generating a control sound was the playback of a DAT recording. One channel contained the white noise (from 200 to 1500 Hz), and the other channel contained the pink noise (500 Hz octave band). The amplitude envelope (Figure 18a) of either control noise type was created with a programmable attenuator connected to the personal computer. By using the programmable attenuator, the computer regulated the SEL and 10 dB "down time" of the control sound.*

The white/pink noise control sounds were presented at 5 dB intervals depending on the sound source with which they were compared (see Table 1a). The sound would gradually rise from inaudible to 10 dB below the maximum level, and then rise to the maximum at a different rate. The sound would then decay in approximately the same manner. (See Figures 18a and 18b for examples of the amplitude envelopes of the two control sounds.) The sound in each house was generated by two loud speakers. The outdoor control sound was the same as the indoor sound, except the outdoor level was 20 dB higher. This 20 dB gain was used because the A-weighted attenuation of a typical American house from outdoors to indoors is about 20 to 25 decibels (A-weighted). For the white/pink noise control sound sources, the control levels were adjusted in ±5 dB steps depending on received test sound levels and the response data already collected. The goal was to have the equivalency point at the middle of the control sound range, which was the middle level for the white/pink noise control sounds. Table 1b contains the actual "base" levels by set.

Conduct of the Test

The test took approximately 3 hours, the first half starting at 1:00 PM, and lasting about 1 hour and 15 minutes. The subjects got a 15-minute break before the second half, which was similar to the first. The participants were told to meet 30 minutes before the test at a large commercial building about 1 km from the site to receive test instructions and to divide into groups. They were bused to the test site (by Vehicle 3) where they received additional information on the test and a folder with six test forms. The subjects were then split into random groups of five or six. They were taken to their test house by a supervisor who remained with the group throughout the test and who gave them more information on the conduct of

* 10-dB down time is the time period when the sound level is within 10 dB of the maximum level.

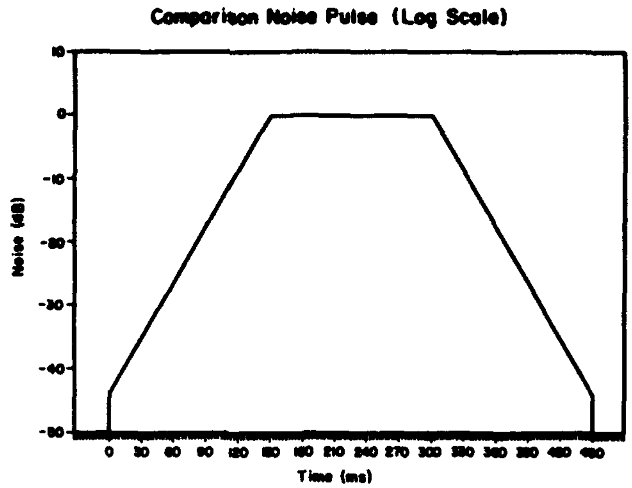


Figure 18a. White-noise control sound amplitude envelope. This sound was used as the control sound for the large blast test sound.

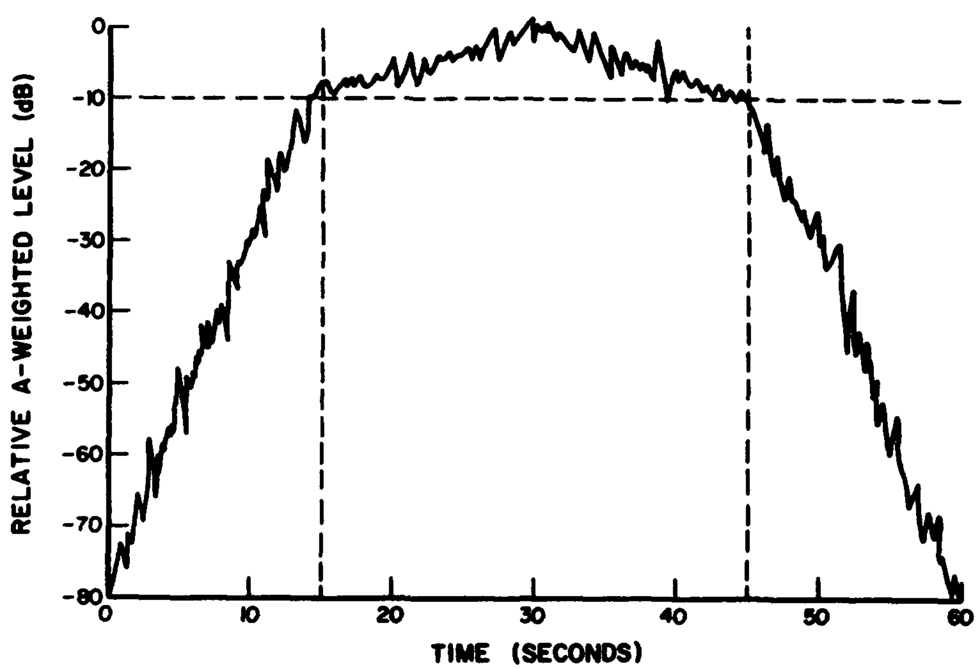


Figure 18b. Pink-noise control sound amplitude envelope. This sound was used as the control sound for Leopard II tank, near gun fire (60 shots), control vehicle 2 sounds.

the test. All of the subject training and supervision was performed by the German researchers. (Figure 14 shows a typical indoor group of test subjects.)

Before the actual test started, there was a pretest that used two pink-noise samples as the pair of sounds. For the first two pretest pairs, the ASEL of the two sounds in each pair differed greatly (10 dB). In the first pair, the first sound was of a much higher level, and in the second pair, the second sound was of a much higher level. In the third pair, the ASELs of the two sounds were equal. Supervisors would check the participants' answers after each pretest run and use the first two pretest pairs to verify that everyone understood the instructions. If a test subject chose the "wrong" answer during the pretest, the supervisor would re-explain the instructions to everyone. If necessary, more pretest pairs were run until everyone fully understood the instructions. The subjects used response form number 0 for the pretest. Figure 19 shows an example of the machine-readable subject response test form.

The judging of each pair of sounds consisted of four different segments. First, a red light would be lit, and subjects would concentrate on the first sound in the pair. Second, a yellow light would be lit, and the participants would listen to the second sound in the pair. Third, a green light would be lit and the subjects would have approximately 5 seconds to mark which sound was more bothersome or annoying. Finally all lights would be turned off, and the subjects would wait until the red light was turned on to signal the start of the next pair of sounds. The red and yellow light segments for the vehicles and small arms lasted for approximately 30 seconds, for the blasts, these lights were lit for about 5 seconds. (Figure 13 shows these control lights atop the loudspeakers in a subject room.)

The computer in the equipment room controlled all of the lights along with the generation of the control sound. The operator of this computer (see Figure 16) was in radio contact with the various military sound source sites. In this way, the entire test was fully coordinated and choreographed. USACERL supervisors were at each sound source site to coordinate activities. Because this was a binational study, communication of instructions to each sound source site was a concern. There was one supervisor (who was German and bilingual) with the small arms, one with the tracked vehicles, one at the blast site, and one with the wheeled vehicles. Figure 6 shows V2 ready to start and other wheeled vehicles being staged into sequence for drivebys, Figure 4 shows a supervisor starting V1 for a driveby, and Figure 20 shows a supervisor starting the Leopard II tank. Many of the German civilian vehicle drivers were bilingual, and the American supervisor used large signs (painted pin-pong paddles) to signal each driver. These signs were numbered for the wheeled vehicles and painted red and green ("ready and

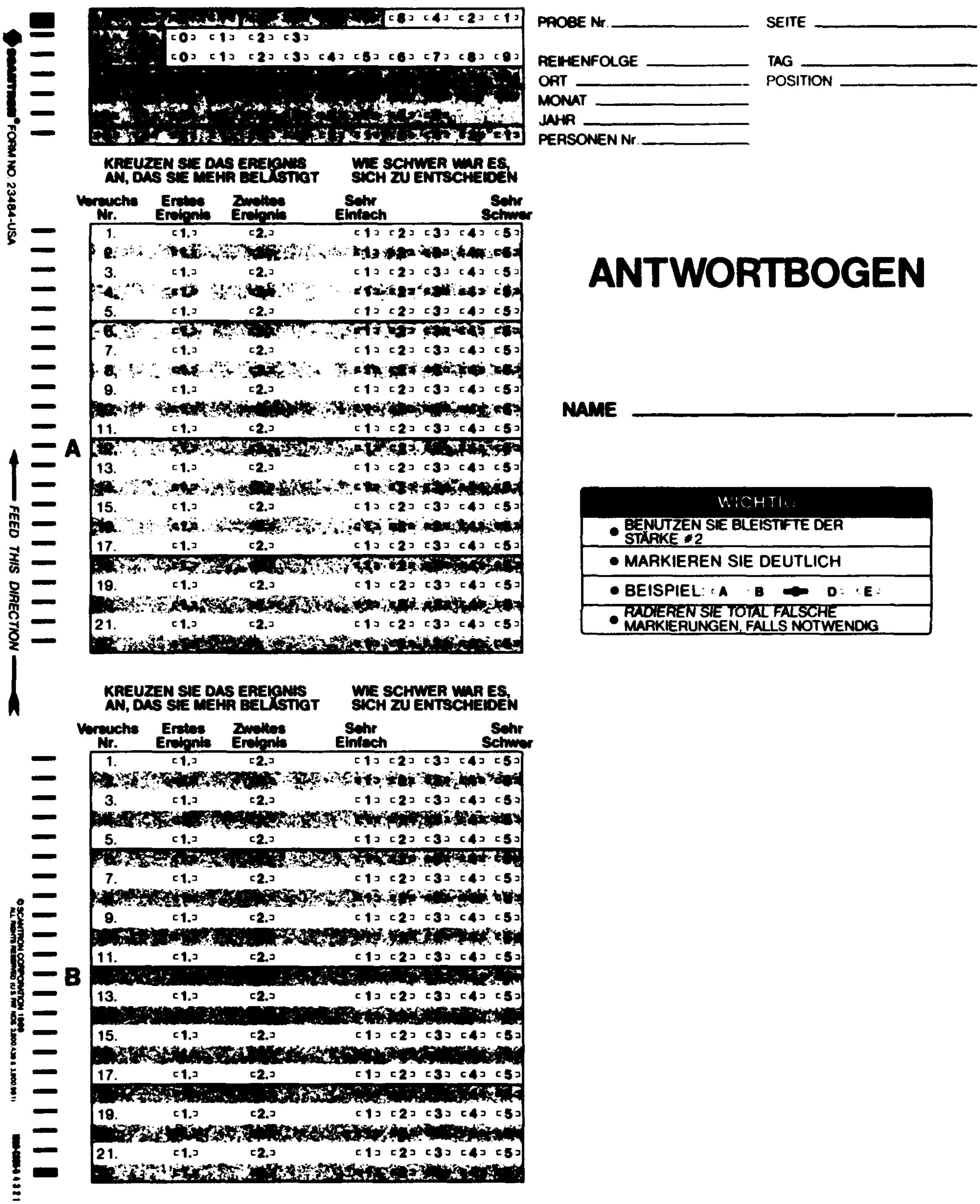


Figure 19. An example of the machine-readable subject response test form.

Figure 20. A supervisor starting the Leopard II tank. Note the large paddle used for signalling.

go") for the tracked vehicles. The German military sergeants at the blast site also spoke excellent English.

The test consisted of 110 pairs of stimuli. For half the pairs of sounds, each military test sound was compared with its associated set of five wheeled-vehicle control sound levels, and the three loudest military test sounds along with V2 were each compared with five levels of computer-generated pink/white-noise control sound. This resulted in 55 comparisons. These pairs of sounds were presented in seemingly random order, with consideration for the return time for the control vehicles. The order of test and control sound within each pair was also apparently random. For the second half, each of the same 55 pairs of sounds were presented in a different random order, but for the second half the order of presentation within each pair, between the test sound and the control sound, was reversed as compared with the first half. Tables 3a and 3b list the 110 pairs of sounds used during each test.

First Half					
	1st Event	2nd Event		1st Event	2nd Event
1	V2	+5 Pink Noise	29	V1	Near Gun-60 shots
2	+10 Pink Noise	Leo II	30	-10 Pink Noise	Near Gun-60 shots
3	V5	Small Blast	31	+5 Pink Noise	Leo II
4	V3	Near Gun-60 shots	32	Large Blast	V3
5	V6	Far Gun-60 shots	33	+10 Pink Noise	V2
6	V2	Leo II	34	Far Gun-60 shots	V5
7	Small Blast	V4	35	-10 White Noise	Large Blast
8	Large Blast	+10 White Noise	36	V4	Leo II
9	+10 Pink Noise	Near Gun-60 shots	37	Small Blast	V6
10	Leo II	-10 Pink Noise	38	Marder	V2
11	Near Gun-60 shots	V5	39	Far Gun-60 shots	V3
12	Near Gun-6 shots	V2	40	Large Blast	+5 White Noise
13	V3	Marder	41	Near Gun-60 shots	-5 Pink Noise
14	V4	Large Blast	42	V2	-10 Pink Noise
15	Leo II	V1	43	V5	Near Gun-6 shots
16	-5 White Noise	Large Blast	44	V3	Small Blast
17	Near Gun-60 shots	+5 Pink Noise	45	Large Blast	-0 White Noise
18	Marder	V5	46	V2	Far Gun-60 shots
19	Large Blast	V2	47	Marder	V4
20	Near Gun-6 shots	V3	48	Leo II	V3
21	V4	Near Gun-60 shots	49	V5	Large Blast
22	Leo II	-0 Pink Noise	50	-0 Pink Noise	Near Gun-60 shots
23	V1	Large Blast	51	-5 Pink Noise	V2
24	Near Gun-60 shots	V2	52	V6	Marder
25	Near Gun-6 shots	V6	53	-5 Pink Noise	Leo II
26	V5	Leo II	54	V4	Far Gun-60 shots
27	V4	Near Gun-6 shots	55		
28	V2	-0 Pink Noise		V2	Small Blast

Table 3a. Order of the sound pairs for the first half of each test. The designation (pair 1) "+5 Pink Noise" shows that the control sound level for that set and test sound was pink noise presented at 5 dB above the "base" sound level. (Table 1b gives "base" sound level by set and test sound.)

Second Half					
	1st Event	2nd Event		1st Event	2nd Event
1	-0 Pink Noise	Leo II	29	Large Blast	-5 White Noise
2	V2	Marder	30	V5	Near Gun-60 Shots
3	Near Gun-60 Shots	-10 Pink Noise	31	-0 Pink Noise	V2
4	Large Blast	V5	32	Large Blast	V1
5	Leo II	+5 Pink Noise	33	V3	Large Blast
6	Marder	V3	34	Leo II	-5 Pink Noise
7	Near Gun-6 Shots	V4	35	Marder	V6
8	V2	Near Gun-6 Shots	36	Near Gun-6 Shots	V5
9	Far Gun-60 Shots	V6	37	V3	Far Gun-60 Shots
10	V5	Marder	38	V2	Near Gun-60 Shots
11	Leo II	+10 Pink Noise	39	Near Gun-60 Shots	V4
12	-5 Pink Noise	Near Gun-60 Shots	40	+10 White Noise	Large Blast
13	V2	-5 Pink Noise	41	V3	Near Gun-6 Shots
14	V4	Small Blast	42	Far Gun-60 Shots	V2
15	V5	Far Gun-60 Shots	43	Leo II	V5
16	Near Gun-60 Shots	+10 Pink Noise	44	Large Blast	V4
17	Small Blast	V3	45	+5 Pink Noise	Near Gun-60 Shots
18	V1	Leo II	46	V2	+10 Pink Noise
19	Small Blast	V2	47	Near Gun-60 Shots	-0 Pink Noise
20	-0 White Noise	Large Blast	48	V3	Leo II
21	V6	Small Blast	49	+5 White Noise	Large Blast
22	Far Gun-60 Shots	V4	50	V2	Large Blast
23	Leo II	V2	51	V6	Near Gun-6 Shots
24	Near Gun-60 Shots	V3	52	Small Blast	V5
25	Near Gun-60 Shots	V1	53	-10 Pink Noise	Leo II
26	Large Blast	-10 White Noise	54	V4	Marder
27	-10 Pink Noise	V2	55	+5 Pink Noise	V2
28	Leo II	V4			

Table 3b. Order of sound pairs for the second half of each test. The designation (pair 1) "-0 Pink Noise" shows that the control sound level for that set and test sound was pink noise presented at the "base" sound level. (Table 1b gives the "base" sound levels by set and test sound.)

The test form (shown in Figure 19) was used by the test subjects to mark which sound was more bothersome or annoying. The first 11 lines in each of the two sections of each test form were used. Test form numbers 1 through 5 were used for the 110 pairs of sounds. Subjects marked the form after each pair of sounds was presented. The subjects were also told to mark how difficult it was to make this decision. They judged difficulty in deciding on a scale of 1 to 5 with the endpoints anchored by the adjectival descriptions "very easy" (*sehr Einfach*) and "very hard" (*sehr Schwer*). It is important to note that test participants were required to decide which sound of the pair was more annoying or bothersome for every run. Subjects were required to make a decision; they could not say that the two sounds were of equal annoyance. But they could indicate that it was "very hard" to decide.

Test Conditions

Three conditions were tested. First, like most previous research in this general area, the windows in each room were closed. The windows-closed condition was used during the first five sets of the test. Second, for the last five sets, the windows were partially open, enabling air flow but not allowing the subjects to see the test stimuli. Figure 21 shows the windows-open condition. Third, for tests 7 through 10, one room was chosen to be vacated and the subjects from that room occupied an outdoor area directly west of the test house. Figures 17a and 17b indicate the location of the outdoor group (shown in Figure 22.) The outdoor group was enlarged from the normal number of 5 or 6 subjects to about 15. All of the subjects could properly hear the test sounds and the wheeled-vehicle control sounds. But the loudspeaker control sound could be heard properly only at the 6 subject's positions near the center of the group. Subjects too far to the sides heard a loudspeaker sound that was too quiet. So all of the data were used for analysis when the control sound source was wheeled vehicles, but only data from the original subject positions were used for analysis when the control sound source was loudspeaker-generated noise.

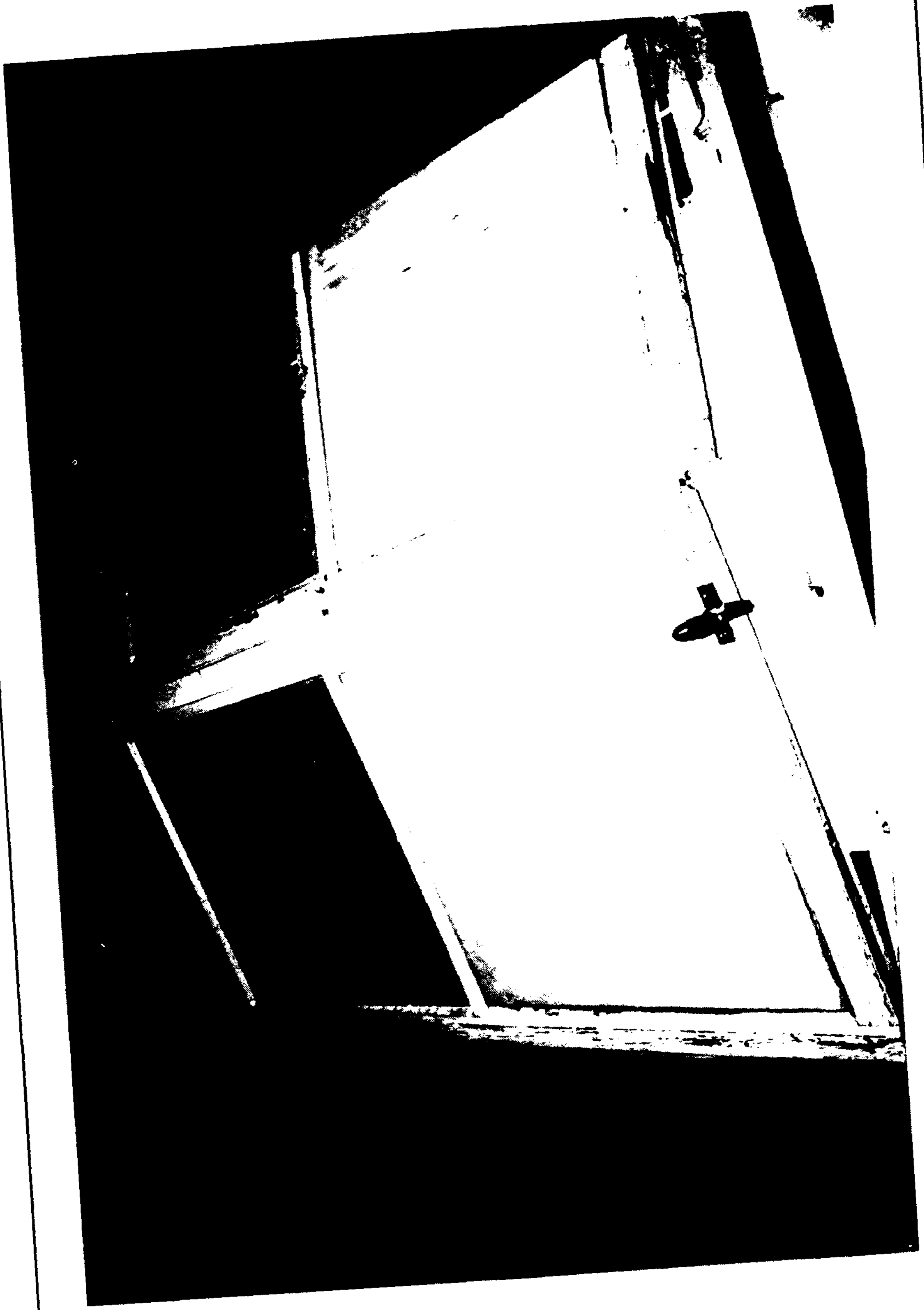


Figure 21. The windows—open test conditions.

Figure 22. An outdoor subject group.

4 Data Analysis

Subject Response Data

The responses of the participants were read by computer and stored in DBASE® files. These were then analyzed to determine the test sound ASEL (CSEL for blast sounds) at which 50 percent of the subjects felt that the test sound was more annoying. Figure 1 shows a hypothetical, typical data plot.

Subject Data Reduction

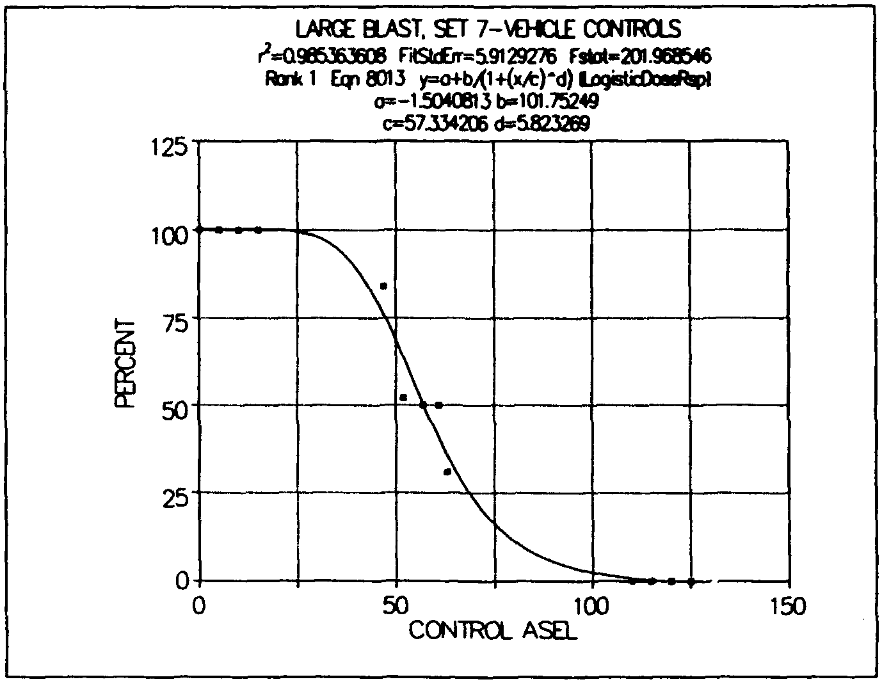
For the American analysis, the subject responses were pooled into large groups and analyzed for each test source paired with each of its 5 respective control sound levels to find the percentage of subjects that were more annoyed by the event at each control sound level. As is shown in Figure 1, plots of these data should take the form of a transitional function such as a sigmoid, logit, or Gaussian cumulative probability curve. Each curve will take this shape for when the control is very quiet; 100 percent of the subjects will find the test sound to be more annoying, and when the control is very loud, 100 percent of the subjects will find the control sound to be more annoying. However, it is not feasible to test with extremely high or low level control sounds. For example, control levels at or below 20 ASEL are virtually inaudible and unmeasurable, and control levels at or above 110 ASEL are well above recommended levels for hearing conservation. So in this analysis, a transitional curve was fit to the data, but this curve was constrained to be very near to 100 percent for control sound levels at or below 20 ASEL, and it was constrained to very near zero percent for control sound levels at or above 110 ASEL. Once the plots were generated, the point at which 50 percent of the subjects felt that the event was more annoying than the control sound was found. This point was called the "equivalency point," meaning that the annoyance of the event and control were equivalent.

In the past, linear regression has been used to fit to the linear, transition portion of the curve. This technique works fine when the 50 percent point lies in the middle of the data range. In the past, this condition has usually been the case because great care is taken during the test to set the test and control sound levels to appropriate values. During this test, rapidly changing weather conditions did not permit us to control the blast levels to the desired degree. Sometimes propagation conditions caused the blasts to have higher or lower levels than

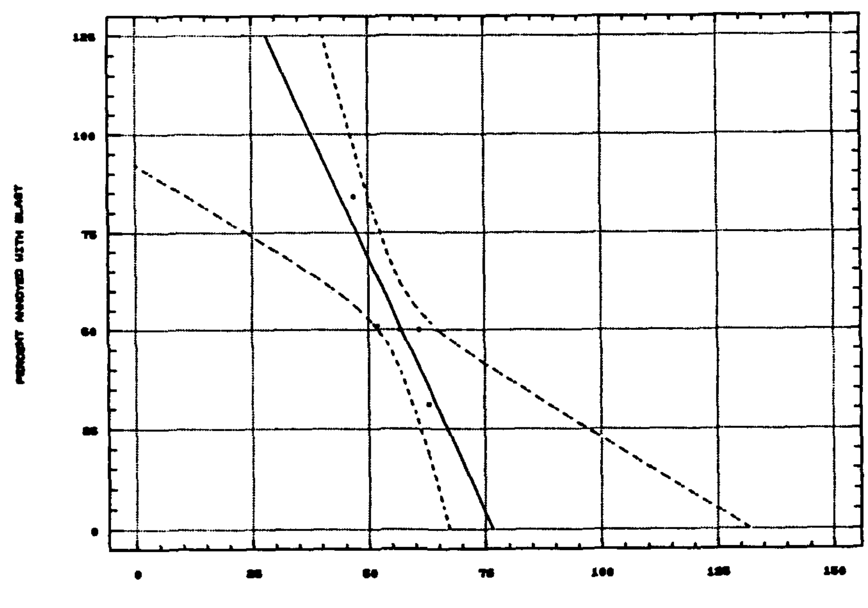
expected (from earlier measurements that day). As a result, much of the blast data could not be analyzed using linear regression. Table 4 contains three example data sets. The first column contains the large blast data of set 7, a normal day; the second column contains the small blast data of set 8, a quieter than expected day; and the third contains the large blast data for set 10, a louder than expected day. Intuitive examination of the data in Table 4 suggests that the 50 percent point (equivalently annoying vehicle sound level) should be about 57, 45, and 67 ASEL for the three cases, respectively. Figure 23 shows the data for set 7, the case where the blast levels were as expected. The 50 percent point lies in the middle of the control sound level range. Figure 23 shows a line fit to the data using linear regression and transitional cure fit to the same data and constrained at low and high control sound levels as indicated above. In this figure, both analysis methods yield virtually the same result, just over 57 dB, and the result is the same as one would intuitively expect upon examination of the data. The error bounds (90 percent confidence) to the linear regression at the 50 percent point meets our requirement of ±20 percent. Figures 24 and 25 show the data for sets 8 and 10. Each demonstrates an extreme where the 50 percent point control sound ASEL is either above or below all of the actual data. In Figure 24, most of the data are beyond the transition towards zero percent, and in Figure 25, most of the data are beyond the transition at 100 percent. Again, in these two figures, both linear regression and transition function fit are portrayed. The better fit using the transition function and the general agreement with intuitive expectation is obvious. In Figure 24, the intuitive value (above) is 45 dB, the transition fit is 45.1 dB and the linear regression fit is 36.0 dB. Linear regression can not be used to fit one-half of a transitional curve. Even though both techniques result in about the same estimate in Figure 25, the 90 percent confidence intervals (Figures 24 and 25) for the linear regression lines show just how inappropriate this technique is when the 50 percent point does not lie in the middle of the data range. So, in this study, all of the data have been fit to

SET 7 Large	Full Range	SET 8 Small	Mainly Low	SET 10 Large	Mainly High
Control Vehicle ASEL	% More Annoyed By Blast	Control Vehicle ASEL	% More Annoyed By Blast	Control Vehicle ASEL	% More Annoyed By Blast
63	31	63	13	71	48
61	50	61	13	63	47
57	50	57	9	61	87
52	52	52	13	57	90
247	84	47	43	52	100

Table 4. Example large blast data for sets 7, 8, and 10. This table contains indoor data (all rooms) for large blast sounds compared with vehicle noise as the control sound.

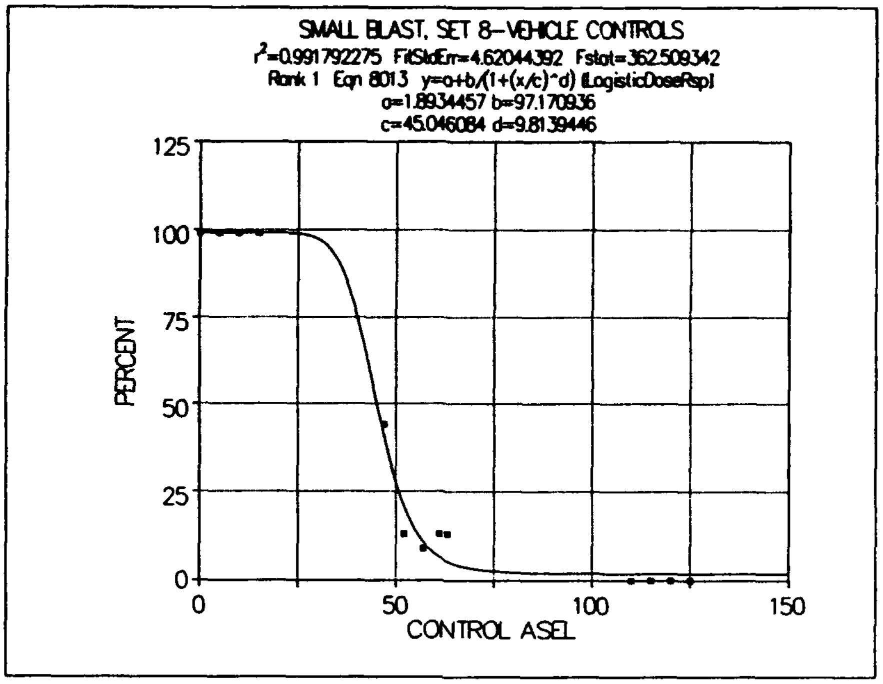


a. Transition function fit to the data.

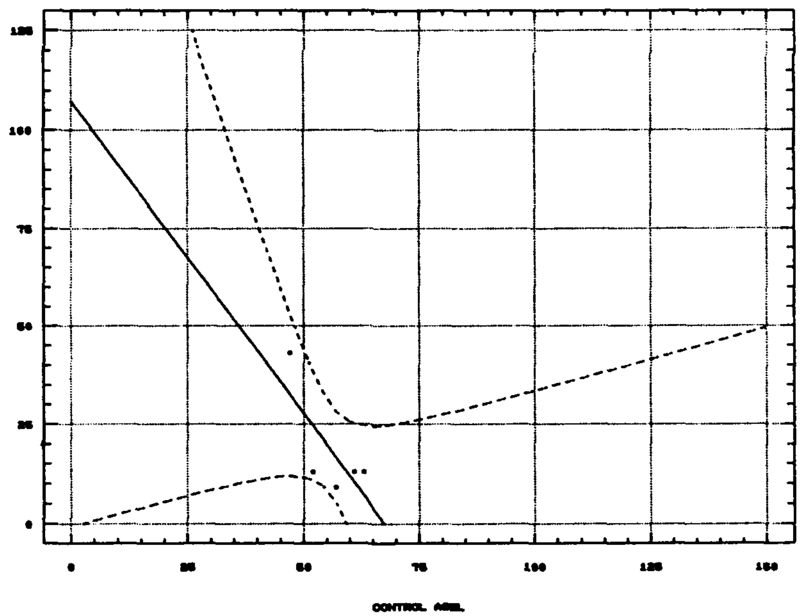


b. Linear regression fit to the data.

Figure 23. Indoor data (all rooms) for set 7—large blast sounds compared with vehicle noise as the control sound. This figure shows the good comparison between the two analysis methods when the 50 percent point lies in the middle of the data range. The intuitive estimate, and both fits agree at 57 ASEL.

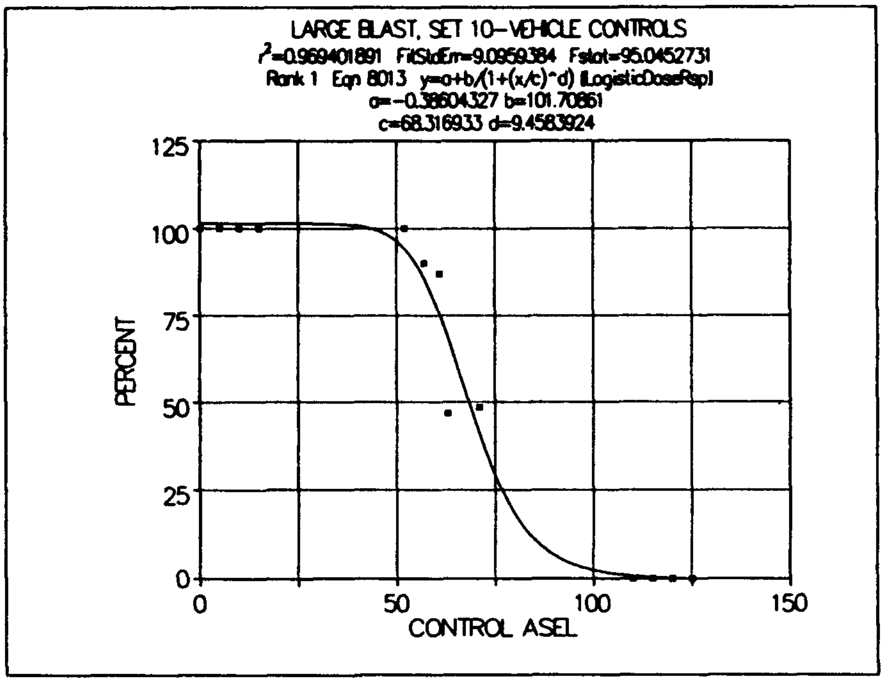


a. Transition function fit to the data.

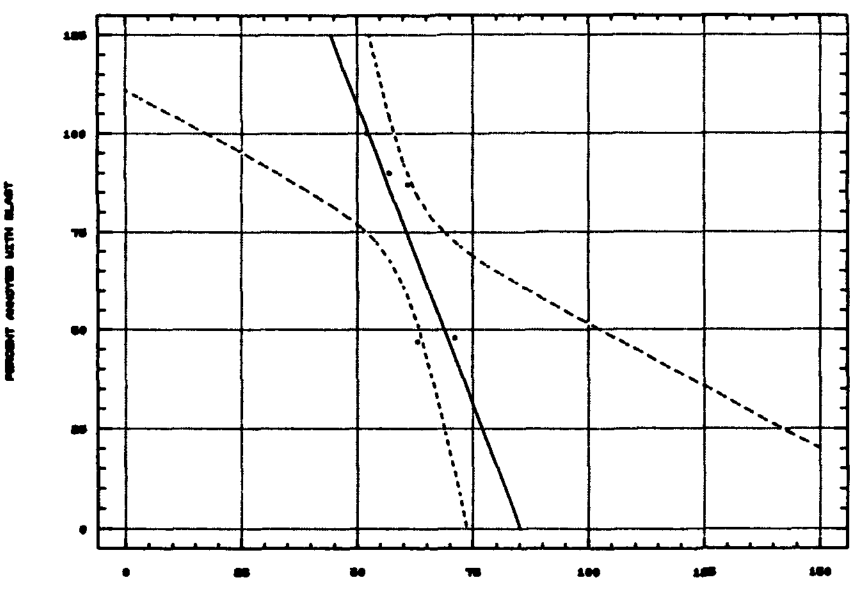


b. Linear regression fit to the data.

Figure 24. Indoor data (all rooms) for set 8—small blast sounds compared with vehicle noise as the control sound. This figure shows the poor comparison between the two analysis methods when the 50 percent point lies outside the data range and the data include a transition region. The intuitive estimate is 45 ASEL, the transition fit estimate is also 45 ASEL, but the regression fit estimate is 36 ASEL and the 90 percent confidence interval is about ±50 percent.



a. Transition function fit to the data.



b. Linear regression fit to the data.

Figure 25. Indoor data (all rooms) for set 10—large blast sounds compared with vehicle noise as the control sound. In this example, the two estimates agree with intuition, but the 90 percent confidence interval using linear regression (at the 50 percent point) is ±25 percent, which exceeds the stated +20 percent criteria.

transition curves constrained to be very near to 100 percent for control sound levels at or below 20 ASEL and constrained to be very near to zero percent for control sound levels at or above 110 ASEL.

These constraints are very conservative. A vehicle pass-by producing an ASEL of 20 dB (indoors at the subject) is unmeasurable and would have a maximum level that might be audible only in the quietest surroundings—no one else breathing, no wind, no other noises, including heating or ventilation noise. A vehicle pass-by producing an ASEL of 110 dB (indoors, at the subject) would have maximum level well in excess of the maximum permitted by the Occupational Safety and Health Administration (OSHA). The actual control vehicle levels (indoors at the subjects) varied between about 42 and 71 ASEL (windows open and closed) and encompassed the needed control level for nearly all of the data.

One of these transitional plots (see Figure 1) was produced for each test sound and corresponding set of 5 control sounds. (Table 1 lists these pairings.) The transition function selected (using maximum likelihood) for any plot was one of the following three: the Gaussian cumulative probability function, the sigmoid function, or the logistic dose-response function. The selection was made on the basis best fit to the data. The curve having the largest **F-statistic** (minimum mean square residuals) was selected.* Appendix A contains all of the curves used, a data listing, the statistical data analysis, and a listing of the residuals.

The German researchers used essentially the same analysis procedure but with smaller groups, and with pooled data. The comparison between these two methods of analysis is very good, and both results are given in the summary tables. Averages of the two methods are used for purposes of discussion and for the development of conclusions.

Acoustical Levels

The acoustical levels for the small arms, tracked-vehicle, and wheeled-vehicle sound were kept very constant from test to test, so the resulting data could be aggregated together based on test condition (windows closed, subjects indoors; windows open, subjects indoors; or subjects outdoors). The blast sound levels were not constant enough from day to day because of changes in sound propagation

* The Sigmoid is the integral of the Logistic peak function, and the Cumulative is the integral of the Gaussian peak function. Since the cumulative area of symmetric peak functions yields symmetric transition functions, the Sigmoid and Cumulative are fully symmetric about the center of the transition. The Logistic Dose Response function is a model used by pharmacologists. This function has a power term that produces an asymmetrical transition.

conditions. So the blast sound data could only be aggregated by one or two sets at a time. These blast sound level "bins" contain about a 3 dB range of blast sound levels. Table 5 summarizes this aggregated data. Appendix B contains the (American) measured average data for sound sources except blasts, and Appendix C lists the (American) measured blast data for each set.

Table 2 listed the general, energy averaged outdoor measured acoustical sound levels. Table 6 lists all of the acoustical data used for overall analysis. These data are energy averaged and rounded to the nearest 1/2 dB. In general, the indoor data were measured using the eight indoor microphones, and, in general, the outdoor data were gathered using the free-field microphone. Blast data were gathered using the microphone located about 10 cm from the middle of the front-facing wall of the test house, and data for the outdoor group were measured with a microphone placed at ear height and in the middle of this group.

Subject Data Results

Tables 7, 8, and 9 summarize the data by location and sound source. These three tables contain all test sounds except blast sounds. Each of these tables is for a specific test condition: indoors, windows closed; indoors, windows open; outdoors. The data by room (or group for outdoors) are listed in Appendix D. Each listing also includes a statistical analysis for the curve fit and the residuals. (For the

	Bin Center Peak (dB)	Bin Center CSEL (dB)	Grouping (Set Number and Charge Size, L=Large; S=Small
First Half Sets 1 - 5	112	89	1S
	113	90	2S, 3S
	117	94	4S, 5S
	119½	96	2L, 3L
	120	97	1L
	123½	100	4L, 5L
Second Half Sets 6 - 10	106	83	6S, 7S
	112	88½	8S, 9S
	119	97	10S
	114½	90	6L, 7L
	119½	95	8L, 9L
	126	103	10L

Table 5. Aggregation of blast data by received level.

Sound Source	Indoors at Subjects Sets 1-5	Indoors at Subjects Sets 6-10	Outdoor Free-Field Sets 1-5	Outdoor Free-Field Sets 6-10	Outdoors at Subjects Sets 7-10
Near guns—60 shots	51	60½	80	83½	80½
Near guns—6 shots	41	51½	71	74½	71½
Far guns—60 shots	43½	50½	69½	72	70
Leopard II	62½	68½	79½	79½	77½
Marder	58	62	72½	73	71
Vehicle 1	65	71	95	95	91
Vehicle 2	57	63	86	85	81
Vehicle 3	55	61	79	78	74
Vehicle 4	52	57	76	76	72
Vehicle 5	47	52	71	71	67
Vehicle 6	42	47	62	61	60

Table 6. All acoustical data used for the overall analysis. These data are energy averaged and rounded to the nearest ½ dB. In general, the indoor data were measured using the eight indoor microphones, and, in general, the outdoor data were gathered using the free-field microphone. Blast data were gathered using the microphone located about 10 cm from the middle of the front-facing wall of the test house, and data for the outdoor group were measured with a microphone placed at ear height and in the midst of this group.

Indoors	SETS 1 TO 5														
	Room A			Room B			Room C			Room D			ALL		
Test Source/ Control	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty
Near guns-60 shots/vehicles	51.0	63.6	12.6	51.7	66.1	14.4	50.2	59.9	9.7	49.7	63.9	14.2	51	63.5	12.5
Near guns-6 shots/vehicles	41.9	53.7	11.8	41.9	55.1	13.2	42.0	52.0	10.0	40.8	55.0	14.2	41	54.0	13.0
Far guns-60 shots/vehicles	44.0	49.8	5.8	45.0	52.4	7.4	43.6	50.5	6.9	43.4	52.1	8.7	43 1/2	51.9	8.4
Leopard II /vehicles	61.7	60.3	-1.4	63.9	56.8	-7.1	63.5	56.1	-7.4	62.4	59.9	-2.5	62	58.5	-4.0
Marder /vehicles	55.9	54.3	-1.6	59.5	53.6	-5.9	58.9	53.5	-5.4	55.1	53.9	-1.2	58	54.4	-3.6
Near guns-60 shots/pink noise	51.0	76.2	25.2	51.7	81.2	29.5	50.2	70.4	20.2	49.7	76.0	26.3	51	75.1	24.1
Leopard II /pink noise	61.7	72.1	10.4	63.9	71.9	8.0	63.5	68.0	4.5	62.4	72.2	9.8	62	70.8	8.3
Vehicle 2 /pink noise	57.6	72.7	15.1	58.2	73.2	15.0	57.2	71.0	13.8	55.4	74.0	18.6	57	72.3	15.3

Table 7. Overall acoustical levels and resulting "penalties" by test room and aggregated across rooms for small arms and tracked-vehicles. The acoustical data are for sets 1 through 5, windows closed. The subjects are located indoors. The acoustical data were gathered at the location of the subjects except for those designated as "outdoors," for indoor subjects.

Indoors	Sets 6 TO 10														
		Room	A		Room	B		Room	C		Room	D		ALL	
Test Source/ Control	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty
Near guns- 60 shots/vehicles	58.7	66.3	7.6	61.5	64.1	2.6	59.6	67.7	8.1	58.2	67.8	9.6	60	66.4	5.9
Near guns- 6 shots/vehicles	49.8	56.1	6.3	51.9	55.7	3.8	50.3	58.0	7.7	50.7	59.5	8.8	51.5	57.4	5.9
Far guns- 60 shots/vehicles	47.7	56.3	8.6	50.9	55.6	4.5	50.0	60.6	10.6	49.4	62.4	13.0	50.5	58.6	8.1
Leopard II /vehicles	67.0	67.6	0.6	68.3	67.4	-0.9	69.1	65.3	-3.8	69.6	66.3	-3.3	68.5	66.8	-1.7
Marder /vehicles	61.3	59.0	-2.3	61.8	59.0	-2.8	64.0	58.9	-5.1	63.2	59.8	-3.4	62	59.2	-2.8
Near guns-60 shots /pink noise	58.7	77.4	18.7	61.5	79.5	18.0	59.6	82.2	22.6	57.6	78.4	20.8	60.5	79.5	19.0
Leopard II /pink noise	66.7	73.6	6.9	68.3	79.2	10.9	70.0	78.5	8.5	69.6	75.2	5.6	68.5	76.8	8.3
Vehicle 2 /pink noise	62.5	74.5	12.0	63.7	77.4	13.7	64.0	81.1	17.1	61.3	74.4	13.1	63	76.7	13.7

Table 8. Overall acoustical levels and resulting "penalties" by test room and aggregated across rooms for small arms and tracked-vehicles. The acoustical data are for sets 6 through 10, windows open. The subjects are located indoors. The acoustical data were gathered at the location of the subjects except for those designated as "outdoors," for indoor subjects.

Outdoors	Sets 7 TO 10								
	Original	6 Subjects		Extra	Subjects			ALL	
Test Source/ Control	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty
Near guns- 60 shots/vehicles	80.5	85.4	4.9	80.5	88.0	7.5	80.5	86.4	5.9
Near guns- 6 shots/vehicles	71.5	76.4	4.9	71.5	73.2	1.7	71.5	74.9	3.4
Far guns- 60 shots/vehicles	70.0	76.6	6.6	70.0	75.5	5.5	70.0	76.2	6.2
Leopard II /vehicles	77.5	79.3	1.8	77.5	77.8	0.3	77.5	78.6	1.1
Marder /vehicles	71.0	72.3	1.3	71.0	72.2	1.2	71.0	72.2	1.2
Near guns- 60 shots/pink noise	80.5	92.3	11.8						
Leopard II /pink noise	77.5	88.4	10.9						
Vehicle 2 /pink noise	81.0	88.4	7.4						

Table 9. Overall acoustical levels and resulting "penalties" for the outdoor group for small arms and tracked-vehicles. The acoustical data are for sets 7 through 10. The acoustical data were gathered at the location of the subjects. Only 6 subjects could properly hear the white-noise control sound. Their data are in the first column. The "extra" subjects (second column) could hear the wheeled-vehicle control sound accurately, but not the white-noise control sound. The third data column contains the combined results for the first two groups when the control sound was generated by wheeled vehicles.

sake of brevity, the actual transition curves were not reproduced.) These tables show that there were no great differences between groups for a given condition.

Unlike the other test sound sources, the blast sound data could not be separated just by condition (windows open, windows closed, outdoors) because the received blast sound levels varied greatly from day-to-day. Rather, these data had to be aggregated into "bins" (Table 5). Because the data were only aggregated by one or two sets at a time, there were too few subjects per aggregation to analyze the data by room (or outdoor location). So Tables 10a and 11a summarize the blast sound results by blast sound level (bin) and test condition. Table 10 is based on acoustical data collected near to the subjects, and Table 11 is based on acoustical data collected outdoors.* These tables also include the data analyzed by single sets (Tables 10b and 11b). The curves, listings, and statistical analysis for these data are contained in Appendix E.

Table 12 gives the size of explosive used during each set; the sizes were varied because of weather conditions so as to keep the received blast sound levels as constant as possible. The target levels were 121 and 115 dB peak, flat-weighted sound pressure level, respectively, for the large and small blast charge sizes.

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* As previously noted, the blast data were measured with a microphone on the front face of the test house; the vehicle data were measured with a free-field microphone (Figure 12). However, the blast data normally arrived at grazing incidence to the front of the test house (Figure 11). For all test sets except sets 2 and 3, the free-field microphone and the front-face microphone both measured like levels for the blast. On sets 2 and 3, the alternate blast site was used (Figure 11) and there was some pressure doubling at the front face of the test house. Since the subjects, and more importantly the structure, reacted to these higher, pressure-doubled levels, the front-face microphone data are used for this analysis.

Subject Acoustical Data	Sets	Blast Size	Control Source	Blast CSEL	Control ASEL	(Δ dB)
Windows Closed	1	Small	Vehicle	77	52.2	-24.8
		Large	Vehicle	84	65.6	-18.4
			Noise		71.7	-12.3
	2 & 3	Small	Vehicle	78	50.5	-27.5
		Large	Vehilce	83	53.2	-29.8
			Noise		62.9	-20.1
	4 & 5	Small	Vehicle	83	57.7	-25.3
		Large	Vehicle	87½	65.6	-21.9
			Noise		72	-15.5
Windows Open	6 & 7	Small	Vehicle	79½	48.7	-30.8
		Large	Vehicle	88½	51.5	-37
			Noise		58.9	-29.6
	8 & 9	Small	Vehicle	83½	49.7	-33.8
		Large	Vehicle	91	57	-34
			Noise		56.5	-34.5
	10	Small	Vehicle	90	63.5	-26.5
		Large	Vehcile	96	68.4	-27.6
			Noise		82.6	-13.4
Outdoors	6 & 7	Small	Vehicle	84½	79.6	-4.9
		Large	Vehicle	91	76.7	-14.3
			Noise		79.1	-11.9
	8 & 9	Small	Vehicle	89	61.4	-27.6
		Large	Vehicle	95	63.7	-31.3
			Noise			
	10	Small	Vehicle	96½	85.6	-10.9
		Large	Vehicle	103	90.8	-12.2
			Noise		90.5	-12.5

Table 10a. Blast and control levels (measured at subjects) and resulting differences by "bin" (Table 5).

Set	Blast Size	Control Source	Test Data Taken at Subjects						
			Indoors, Windows Closed			SET	Indoors, Windows Open		
			Blast CSEL	Control ASEL	(Δ dB)		Blast CSEL	Control ASEL	(Δ dB)
2	Small	Vehicle	81	53.1	-27.9	6	78	48.1	-29.9
	Large	Vehicle	83	53.7	-29.3		87		
		Noise		63.9	-19.1			50.7	-36.3
3	Small	Vehicle	76	48	-28	7	81	50.4	-30.6
	Large	Vehicle	83	52.6	-30.4		90	57.1	-32.9
		Noise		61.5	-21.5			66.2	-23.8
4	Small	Vehicle	83	62.8	-20.2	8	82	45.1	-36.9
	Large	Vehicle	88	69.4	-18.6		90	48.6	-41.4
		Noise		74.7	-13.3			47	-43
5	Small	Vehicle	83	55.1	-27.9	9	85	54.9	-30.1
	Large	Vehicle	87	62.5	-24.5		92	63.7	-28.3
		Noise		68.2	-18.8			65.9	-26.1
Outdoors									
8	Small	Vehicle	88	78.7	-9.3	9	89½	75.7	-13.8
	Large	Vehicle	94½	78.3	-16.2		96	85.1	-10.9
		Noise						84.9	-11.1

Table 10b. Blast and control levels (measured at subjects) and resulting differences by set.

Free-Field Outdoor Data	Sets	Blast Size	Blast CSEL	Control ASEL	(Δ dB)
Windows Closed	1	Small	89	77	-12
		Large	97	96.1	-0.9
	2 and 3	Small	90	74.5	-15.5
		Large	96	78.5	-17.5
	4 and 5	Small	93½	85	-8.5
		Large	100	96.4	-3.6
Windows Open	6 and 7	Small	83	64	-19
		Large	90	67.9	-22.1
	8 and 9	Small	88½	65.4	-23.1
		Large	95	75.6	-19.4
	10	Small	97	84.4	-12.6
		Large	103	91.1	-11.9
Outdoors	7	Small	84½	79.6	-4.9
		Large	91	76.7	-14.3
	8 and 9	Small	89	61.4	-27.6
		Large	95	63.7	-31.3
	10	Small	96½	95.6	-10.9
		Large	103	90.8	-12.2

Table 11a. Blast and control levels (measured outdoors in a free-field) and resulting differences by "bin" (Table 5). There are no white noise control data "outdoors."

Free-Field Outdoor Data	Sets	Blast Size	Blast CSEL	Control ASEL	(Δ dB)
Windows Closed	2	Small	91	78.3	-12.7
		Large	96	79.2	-16.8
	3	Small	89	71.1	-17.9
		Large	96	77.6	-18.4
	4	Small	93	92.1	-0.9
		Large	100	101.5	1.5
	5	Small	94	81.2	-12.8
		Large	100	91.7	-8.3
Windows Open	6	Small	81	63.4	-17.6
		Large	89		
	7	Small	85	66.7	-18.3
		Large	91	75.8	-15.2
	8	Small	88	59.5	-28.5
		Large	94	64.2	-29.8
	9	Small	89	72.8	-16.2
		Large	96	84.7	-11.3
Outdoors	8	Small	88	78.7	-9.3
		Large	94½	78.3	-16.2
	9	Small	89½	75.7	-13.8
		Large	96	85.1	-10.9

Table 11b. Blast and control levels (measured outdoors in a free-field) and resulting differences by set. There are no white noise control data "Outdoors." Data for sets 1 and 10 indoors and 7 and 10 outdoors are included in Table 11a.

Set	Blast Charge Sizes
1	2 kg, 500 g
2	2 kg, 500 g
3	2 kg, 300 g
4	2 kg, 500 g
5	1 kg, 200 g; 2 kg, 500 g
6	2 kg, 500 g
7	4 kg, 1 kg
8	4 kg, 1 kg
9	4 kg, 1 kg
10	4 kg, 1 kg; 2 kg, 500 g

Table 12. Blast charge sizes by set for the large and small charges respectively. For sets 5 and 10, the weather conditions changed sufficiently during the test to warrant a change in charge sizes between the first and second halves. With this change in charge size, the received sound levels remained constant enough from first half to second half so that all of the data for the set could be analyzed together.

5 Discussion

In the following, results are given both for acoustical data gathered near the subjects' ears and for acoustical data collected **outdoors**, but with subjects **indoors**.

Small Arms and Tracked-Vehicle Sounds—Indoor Data, Measured at Subjects' Ears

Table 13 summarizes the results for the three test conditions of windows closed, windows open, and outdoors (except f[illegible]und). Table 13 includes both the American and the German results in parenthesis, and the average of the two used for purposes of this discussion. These results are based on measurements from microphones placed near the subjects. This table includes amalgamated data for the four indoor rooms taken together and for the enlarged outdoor group. As previously noted, only the "regular" outdoor group could accurately hear and judge the outdoor white-noise control sound, so only their data are reported for the white-noise judgements. In Table 13, the "differences" are the penalties one would add to make the subjective annoyance assessments equivalent.

Several points can be derived from the results in Table 13. First, the subjects' answers are dependent on the control sound source. The results using the pink-noise control sound are substantially different from the results using wheeled-vehicle sound as the control. In fact, this difference is on the order of 10 decibels. Second, the penalty for small-arms sound shows considerable variation with distance, rate-of-fire, and test condition (windows open or shut or subjects outdoors), and ranges from 3 to 13 decibels. Overall, this penalty is on the order of 8 to 10 decibels. Third, there is a small, negative penalty to be applied to tracked-vehicle sound when compared with wheeled-vehicle sound.

The differences between using a pink-noise or wheeled-vehicle control sound are unexpected and counter to "conventional wisdom." Nevertheless, these differences are internally consistent. With windows closed, the difference between the pink-noise control sound level and an equivalently annoying vehicle sound level—both measured near the subjects' ears—is about 12 or 14 dB (ASEL). This result is in sharp contrast to the widely accepted theory that A-weighted Leq and ASEL are adequate for noise assessment. But the results are internally consistent, indicating that this difference of 12 or 14 decibels is real. Table 14 demonstrates

Sound Source/Control	TEST DATA TAKEN AT SUBJECT								
	Indoors, Window Closed			Indoors, Window Open			Outdoors		
	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty
Near Guns-60 shots/Vehicles	51	63½	(12.5/12.6) 12½	60½	67½	(5.9/7.6) 7	80½	86½	(5.9/5.9) 6
Near Guns-6 shots/Vehicles	three 41	second 54	duration (13.0/12.8) 13	thirty 51½	second 58	duration (5.9/7.1) 6½	thirty 71½	second 75	duration (3.4/4.0) 3½
Far Guns-60 shots/Vehicles	43½	52	(8.4/8.4) 8½	50½	59	(8.1/9.1) 8½	70	77	(6.2/7.5) 7
Leopard II /Vehicles	62½	59½	(-4.0/-2.3) -3	68½	66½	(-1.7/-2.1) -2	77½	79	(1.1/2.3) 1½
Marder /Vehicles	58	54½	(-3.6/-3.5) -3½	62	59½	(-2.8/-2.5) -2½	71	72½	(1.2/1.9) 1½
Near Guns-60 shots/Pink Noise	51	74½	(24.1/22.6) 23½	60½	79½	(19.0/19.3) 19	80½	92½	(11.8/12.4) 12
Leopard II /Pink Noise	62½	71	(8.3/9.0) 8½	68½	77	(8.3/8.9) 8½	77½	88½	(10.9/11.1) 11
Vehicle 2 (V2) /Pink Noise	57	71½	(15.3/14.1) 14½	63	76½	(13.7/13.4) 13½	81	89	(7.4/8.7) 8

Table 13. Overall acoustical levels and resulting "penalties" for small arms and tracked-vehicles. The acoustical measurements were made near the location of the subjects; indoors, for indoor subjects, outdoors, for outdoor subjects. The numbers in parenthesis are the American and German values, respectively.

Sound Source/Control	TEST DATA TAKEN AT SUBJECT								
	Indoors, Window Closed			Indoors, Window Open			Outdoors		
	Vehicle Control Δ dB	Pink Noise Control Δ dB	Differ-ence	Vehicle Control Δ dB	Pink Noise Control Δ dB	Differ-ence	Vehicle Control Δ dB	Pink Noise Control Δ dB	Differ-ence
Near Guns - 60 shots	12½	23½	11	7	19	12	6	12	6
Leopard II	-3	8 1/2	11½	-2	8 1/2	10½	1½	11	9½
Vehicle 2 (V2)/ Pink Noise	Vehicle ASEL	Noise ASEL	Δ dB	Vehicle ASEL	Noise ASEL	Δ dB	Vehicle ASEL	Noise ASEL	Δ dB
	57	71½	14½	63	13½	10½	81	89	8

Table 14. Differences between using wheeled-vehicles and a 500 Hz octave-band of pink noise as the control sound source compared with the "equivalency" found from the sound of V2 directly compared with the pink-noise control sound. Note the internal consistency. With windows closed, the difference is about 12 dB; with windows open, the difference is almost the same at about 11 dB; and outdoors, the difference is about 8 dB.

this internal consistency. This table shows the difference in penalty between using these two control sounds (vehicles or pink noise) for small arms and tracked vehicles compared with the difference between V2 and its equivalent pink noise control sound. Table 14 includes the three test conditions. Blast sound is not included in Table 14 since the white-noise control sound used with blast sounds had a different spectrum and duration than the pink-noise control sound used with V2, near gunfire (60 shots), or with the Leopard II tank. For each test condition, the difference between V2 and its equivalent pink-noise control sound is very similar in value to the difference in penalty found between using vehicle or pink noise sound as the control for near gunfire (60 shots) or the Leopard II tank sound.

This difference between pink-noise and wheeled vehicle sound is very important to testing methodology and interpretation of results. Some have suggested that in a paired comparison test, subjects are responding to loudness. If this were true, then the responses would be more or less equal for equal ASEL. This is not true; the subjects are assessing annoyance, as requested in the test instructions. Further, this difference between pink-noise and wheeled vehicle sound calls into question any testing methodology that uses artificial sounds, since these results show that artificial sounds cannot be used as a surrogate for real sounds when testing noise annoyance.

The difference between the three test conditions (indoors, windows closed; indoors, windows open; outdoors) are perhaps more perplexing than the differences between results using the two different control sounds. In particular, changes between the conditions of windows closed and windows open are unexpected. First, as discussed above, the penalty for gunfire, and, as is shown later, blast noise, decreases when the windows are opened or when the subjects are moved outdoors. Indoors, with windows closed, the small arms penalty (vehicle control noise) ranges from 8 1/2 to 13 dB; 11 dB is average. With windows open or outdoors, the average penalty drops to about 7 1/2 dB. With pink noise as the control sound source, the penalty changes from about 23 1/2 to 19. So for both control sounds, the penalty or gunfire decreases by about 3 1/2 decibels when the windows are opened. The penalty for tracked vehicles does not change very much when the windows are opened; the indoor penalty varies a little from about -3 1/2 dB when the windows are closed to -2 1/2 dB when the windows are open.

Small Arms and Tracked-Vehicle Sounds—Outdoor Acoustical Data, Subjects Indoors

Environmental noise is normally measured and assessed on the basis of outdoor data. For example, airport or highway noise contours predict the outdoor levels; not the levels at the ears of residents in houses. So mpare military noise

vis-a-vis traffic noise, it is **mandatory** that the "penalties" be based on outdoor-measured acoustical levels—even though the judgments are made by subjects situated indoors. Table 15 develops these outdoor-measured penalties for subjects situated indoors.

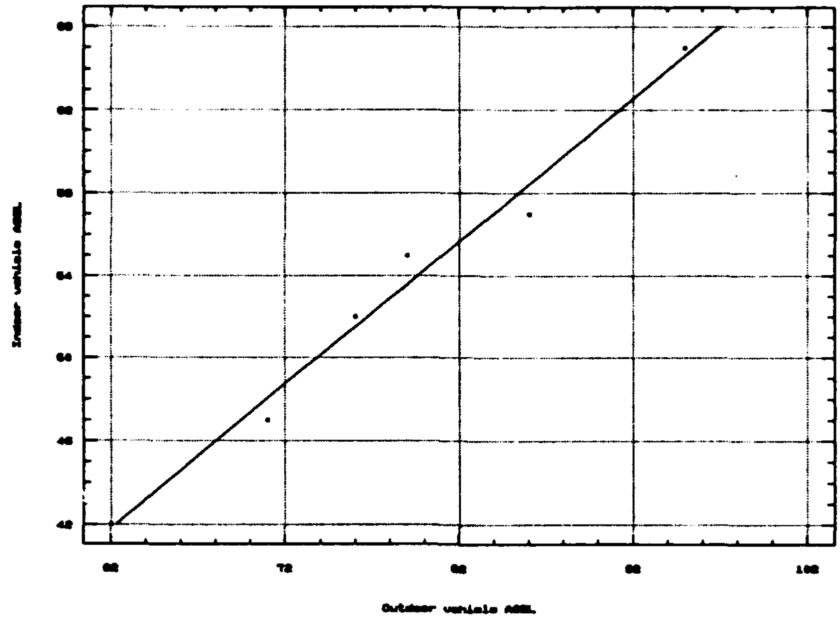
Table 15 uses the acoustical data measured by the free-field microphone—even for the outdoor group, since it is the free-field microphone that simulates what one would normally measure for general environmental assessment and regulatory compliance.

Table 15 is similar to Table 13. Both tables are based on the same subject-response data and analysis. However, in Table 15, the acoustical data are "translated" from the indoor levels given in Table 13 to outdoor levels. The outdoor levels for the test and vehicle control sounds are given in Table 6. However, the equivalent vehicle control sound levels found in Table 13 do not correspond to any particular vehicle; they are the result of the transition curve fitting. Figure 26 shows linear regression lines fit to the indoor and corresponding outdoor vehicle noise level for both the windows open and windows closed test conditions. The outdoor levels are taken as the independent variable. This regression line is used to "translate" the indoor vehicle control levels to the outdoor levels given in Table 15.

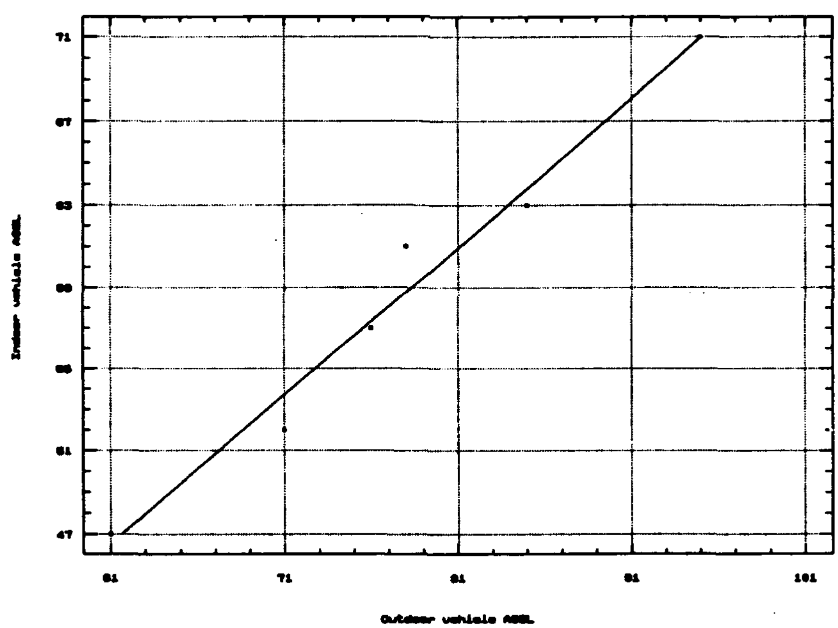
The control vehicle sound attenuation from outdoors to indoors varies with vehicle and condition as is shown in Figure 26. With windows closed, the attenuation (ASEL) varies proportionally from about 30 dB for Vehicle 1 to about 20 dB for Vehicle 6, and with windows open, the attenuation varies from about 24 dB for Vehicle 1 to about 16 dB for Vehicle 6. For general traffic, 25 and 20 dB would be the typical attenuation for the windows closed and windows open conditions, respectively. This situation suggests that the "penalties" in Table 15 are too large when the control vehicle sound ASEL are near the top of the range, and too small when the ASEL are near the bottom of the range. In Table 15, the control ASEL for Near Guns (6-shots), Far Guns, and the Marder are all near the middle of the range where the vehicle sound attenuation from outdoors to indoors is typical. So these require little adjustment. But the control ASEL for Near Guns (60-shots) and the Leopard II are near the top of the range. Hence, these penalties require some adjustment to make them the penalty one would derive with typical road traffic instead of the very large, unusual truck that thev actually pair with. With windows closed, Near Guns (60-shots) approximately pair with Vehicle 1, and the Leopard II approximately pairs with Vehicle 2. With windows closed, both of these test sound sources approximately pair with Vehicle 2.

Sound Source/Control	TEST DATA TAKEN OUTDOORS								
	Indoors, Window Closed			Indoors, Window Open			Outdoors		
	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty
Near Guns-60 Shots/Vehicles	80	93½	13½	83½	90	6½	83½	90½	?
Near Guns-6 Shots/Vehicles	three 71	second 79½	duration 8½	thirty 74½	second 77	duration 2½	thirty 74½	second 79	duration 4½
Far Guns-60 Shots/Vehicles	69½	76½	7	72	78½	6½	72	81	9
Leopard II/Vehicles	79½	87½	8	79½	89	9½	79½	83	3½
Marder/Vehicles	72½	80½	8	73	79	6	73	76½	3½

Table 15. Overall acoustical levels and resulting "penalties" for small arms and tracked-vehicles. The subjects are located indoors but the acoustical data are gathered outdoors in a free-field next to the house. (There are no outdoor pink-noise levels since pink-noise sound was presented to the subjects via loudspeakers located indoors.)



a. Windows closed.



b. Windows open.

Figure 26. Linear regression lines fit to the outdoor and corresponding indoor control vehicle sound levels for conditions of windows closed (26a) and windows open (26b).

Vehicle 2 and, especially, vehicle 1 are unusual. Vehicle 2 was a tow truck for towing large trucks, and vehicle 1 was a very heavy tractor and trailer for transporting large battle tanks. Since the test plan required that the vehicle sound levels span a 30-dB range, vehicles 1 through 3 were driven so as to maximize their noise output, thus maximizing the control sound range. To maximize their noise output, these vehicles were driven in a low gear so as to increase engine noise. This vehicle operation, of course, increases engine RPM and the resulting spectrum of the engine noise. As a result, the largest vehicles exhibit the largest outdoor to indoor sound attenuation. So test sound sources that pair with vehicles 1 or 2 should be adjusted for the unusual building attenuation that results from the operation of these unusual wheeled vehicles.

Since the penalties are being developed with respect to "traffic noise," one simple adjustment is to use a standard attenuation by the windows and walls for "traffic noise." The data in this experiment suggest that 25 dB is the attenuation of typical traffic noise attenuation from outdoors to indoors with windows closed, and that 20 dB is the typical traffic noise attenuation from outdoors to indoors with windows open. These values have been used to convert the data in Table 13 to the data in Table 16. The results in Table 16 are similar to Table 15 except that the penalties diminish somewhat for those test sounds that had corresponding control vehicle ASELs near the levels for Vehicle 1 or 2. (As with Table 15, Table 16 uses the free-field microphone data for the outdoor group, since it is the free-field microphone that simulates what one would normally measure for general environmental assessment and a regulatory compliance.)

In Table 13, the penalty for sound from the near gunfire site with windows closed is about 13 dB and with windows open it is about 7 dB. The penalty is the same for 6 shots or 60 shots. Again, in Table 16, the penalty for the near gun sound seems to be constant with conditions for the near gun site. With windows closed, the penalty is about 8 dB, and with windows open it is about 4 dB. Table 15 does not show this regularity with gun site, but this consistency in results evident in Tables 13 and 16 offers some proof that the adjustments used to obtain Table 16 are valid.

Further, these results in Tables 13 and 16 for sound from the near gun site offer proof that an equal-energy model is appropriate for gunfire noise. For the same single event ASEL, the penalty is constant with condition. Sixty shots indicate an equivalent control level that is 10 dB higher than the control level for 6 shots. This result holds independently of whether the 6 shots occur in 3 seconds or in 30 seconds. So the equal-energy model draws support from these results. However, the penalty appears to vary with condition and sound source site (spectrum). So

Sound Source/Control	TEST DATA TAKEN OUTDOORS								
	Indoors, Window Closed			Indoors, Window Open			Outdoors		
	Source ASEL	Corrected Control ASEL	(Δ dB) Penalty	Source ASEL	Corrected Control ASEL	(Δ dB) Penalty	Source ASEL	Control ASEL	(Δ dB) Penalty
Near Guns-60 Shots/Vehicles	80	88 1/2	8 1/2	83 1/2	87 1/2	4	83 1/2	90 1/2	7
Near Guns-6 Shots/Vehicles	<u>three</u> 71	<u>second</u> 79	<u>duration</u> 8	<u>thirty</u> 74 1/2	<u>second</u> 78	<u>duration</u> 3 1/2	<u>thirty</u> 74 1/2	<u>second</u> 79	<u>duration</u> 4 1/2
Far Guns-60 Shots/Vehicles	69 1/2	77	7 1/2	72	79	7	72	81	9
Leopard II/Vehicles	79 1/2	84 1/2	5	79 1/2	86 1/2	7	79 1/2	83	3 1/2
Marder/Vehicles	72 1/2	79 1/2	7	73	79 1/2	5 1/2	73	76 1/2	3 1/2

Table 16. Overall acoustical test sound levels, "corrected" control sound levels and resulting "penalties" for small arms and tracked-vehicles. The subjects are located indoors but the acoustical data are gathered outdoors in a free-field next to the house.

there is some evidence for some form of level dependence to the penalty. These data suggest a complicated dependence with level (e.g., ASEL or A-fast max).

The data in Table 16 suggest an overall small arms penalty which is about 8 dB or less. As with Table 13, the penalties change with condition: windows open, windows closed or outdoors. But these penalties do not appear to shift with rate of fire or total number of shots.

Tracked vehicles exhibit an interesting result. For indoor subjects, the tracked vehicle penalty is about ±5 dB when the sound is measured outdoors; it reverses sign and is about -2 dB when the sound is measured indoors. Because environmental noise is normally measured outdoors, the results in Table 16 are considered to be more reliable and useful than the results in Table 13.

A Model for Small Arms Noise

The data in Tables 13 and 16 support an energy model for small arms, but they are more equivocal on the value for an exact penalty. There is some evidence of a level dependent penalty. However, this occurs only for the higher spectral content gunfire noise from the near site. The lower spectral content noise from the far site indicates a conflicting result. Nevertheless, the data in Tables 13 and 16 seem to provide strong support for an equal energy model with some penalty (or penalty function). Under all conditions, and in both tables, when the number of rounds (near site) changes from 60 to 6, the equivalently annoying control vehicle sound changes by about 10 dB. Moreover, this result occurs both for 6 rounds in 30 seconds and for 6 rounds in 3 seconds rate of fire.

As noted above, since indoor dwelling unit environments are normally assessed by outdoor measurements, the best guidance on a penalty comes from Table 16. This table indicates a penalty of about 7 or 8 dB.

Blast Sound

As with the other test sound sources, blast test sounds were compared both with control sounds generated by wheeled vehicles and with white-noise sounds generated using a loud speaker. The wheeled-vehicle control sounds were identical with those used for the small arms and tanks; the white-noise control sound, as described earlier, differed in spectral content and duration from the pink-noise sound presented to the subjects as the control for V2, the near gun fire (60 shots), and the Leopard II tank. The white-noise control sound was identical

to the control sound used in similar, earlier tests at GTA in Germany and at APG, MD in the United States.*

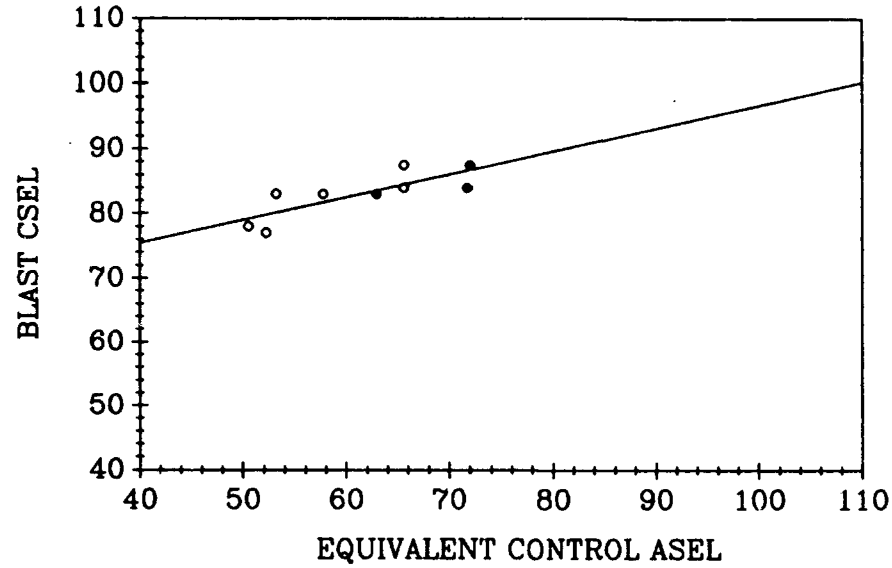
Figure 27 shows the data and regression line for blast data measured indoors during sets 1 through 5, data for the windows-closed condition.** These data represent equivalency points for blast sound data grouped by level across sets of data. The data were analyzed by set. For example, the lowest data point occurred when the blast CSEL was about 68 dB. The white-noise control sound equivalency point, the point where 50 percent of the subjects found the blast sound more annoying and the other 50 percent of the subjects found the control sound more annoying, was 44 dB (ASEL).

Unlike the data for the Leopard II tank, V2 and small arms, the blast data exhibit no difference between using the wheeled-vehicle control sound or the white-noise control sound. But the white-noise control sound is vastly different from the pink-noise control sound used with the Leopard II tank, small arms, and V2. The white-noise control sound is a short pulse of the 200 to 1500 Hz band of white noise; the pink noise control sound was a long, haystack time pattern of the 500 Hz octave band of pink noise. So this white noise control sound may fortuitously yield the same result as the wheeled-vehicle control sound.

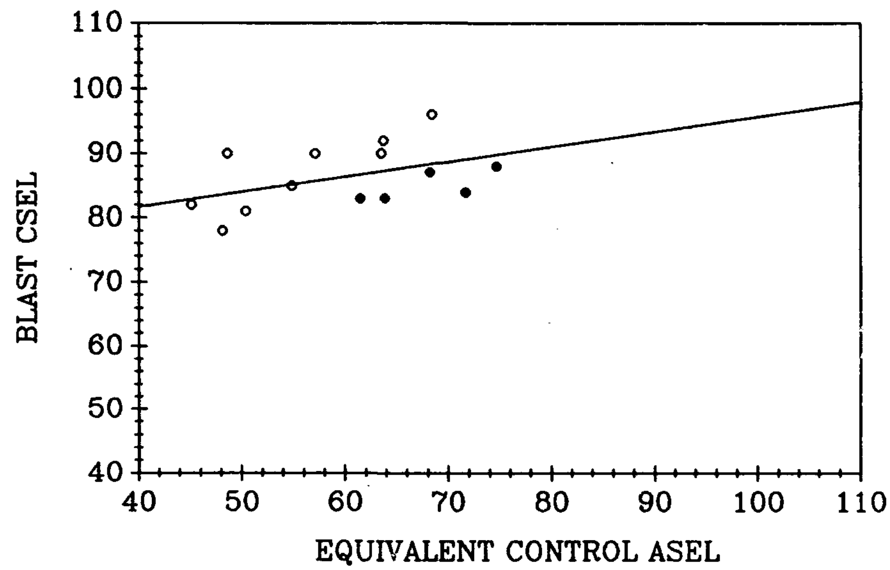
Figure 28 shows data and regression lines for earlier results from GTA and APG along with the new results from Munster. All of these data are for the windows-closed test condition. At each site, the large charge-size blast sound source was typically about 5 lb (or 2 kg) of explosives (C-4 or military TNT), the small blast sound source was about 500 g of explosives, and the blast site was located about 1 km from the test houses. The most important feature of either regression line in Figure 28 is its slope. A 1-dB change in (indoor) CSEL corresponds to about a 2-decibel change in equivalent control ASEL.

* At this writing, tests at Aberdeen are still in progress.

** Appendix E contains the tabulated data for indoor acoustical measurements for all the figures in this section and Appendix F contains similar data for outdoor acoustical measurements. It also includes the blast data analyzed by bins, where the bins represent like groupings of blast data—within about 3 decibels. The results with the data grouped into bins are about the same as the results when the data are analyzed by set.



a. Bin data.



b. Individual sets.

Figure 27. Data and regression line for blast data measured indoors during sets 1 through 5; data for the windows-closed condition. Data for both white noise (filled circles) and vehicle controls (open circles) are included in this figure. These data represent equivalency points for blast sound data grouped across rooms by set. Figure 27a is for the "bin" data and Figure 27b is the data for individual sets. The resulting regression lines are virtually the same in both figures.

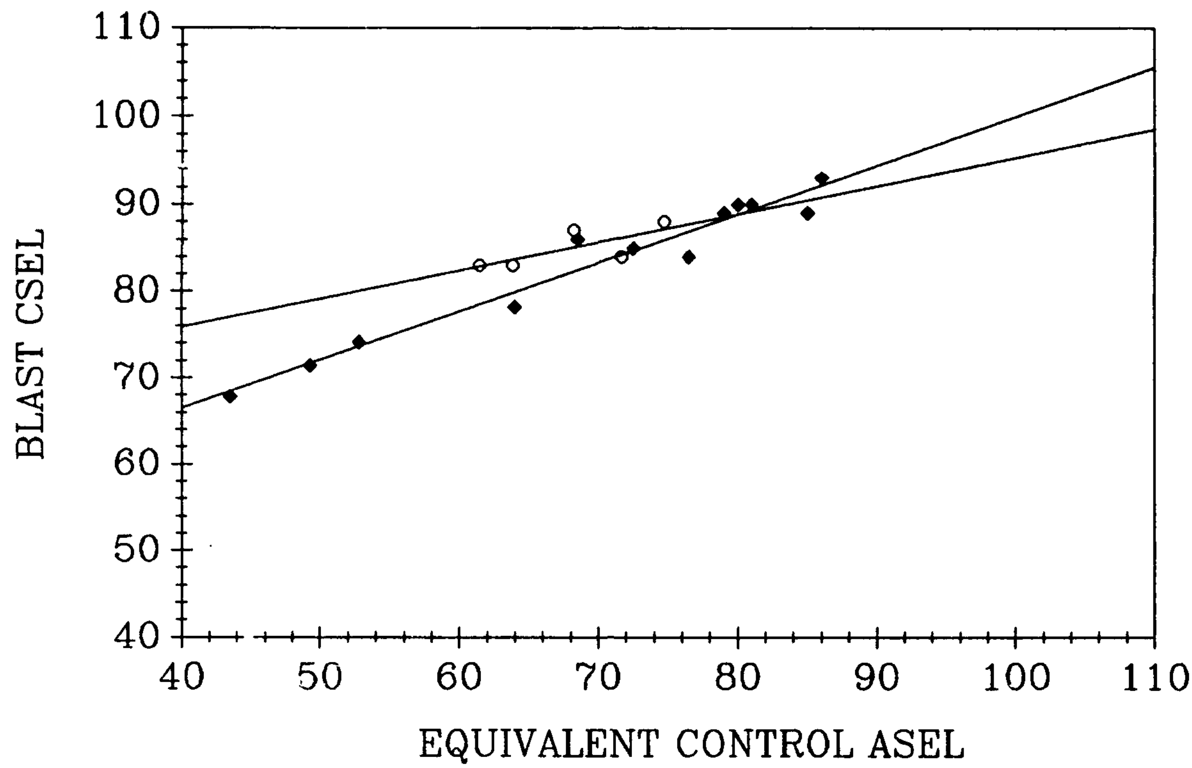
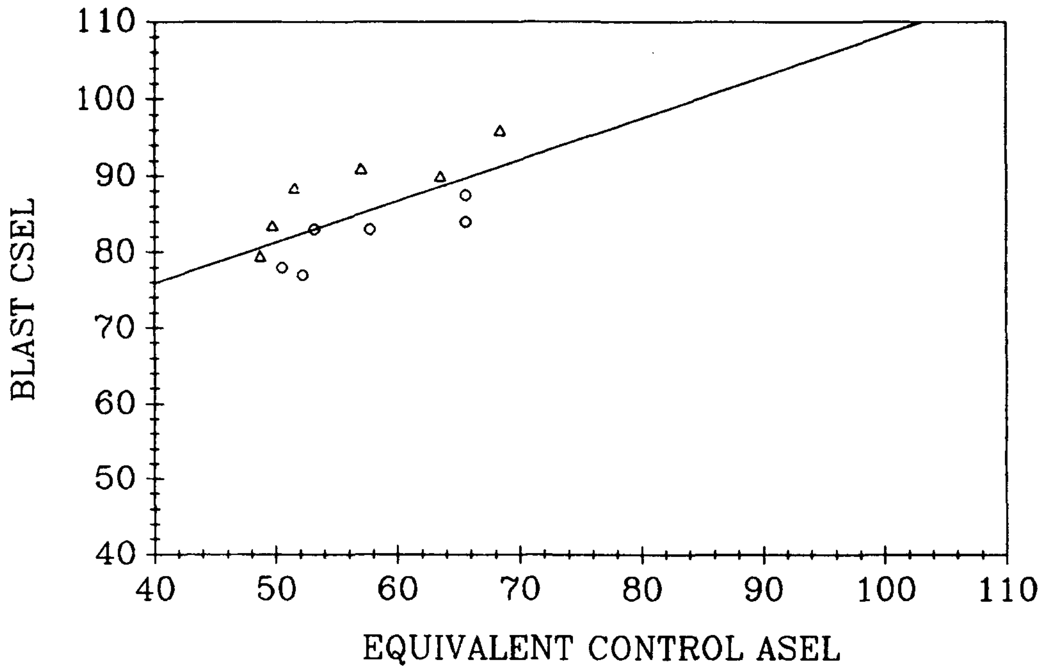


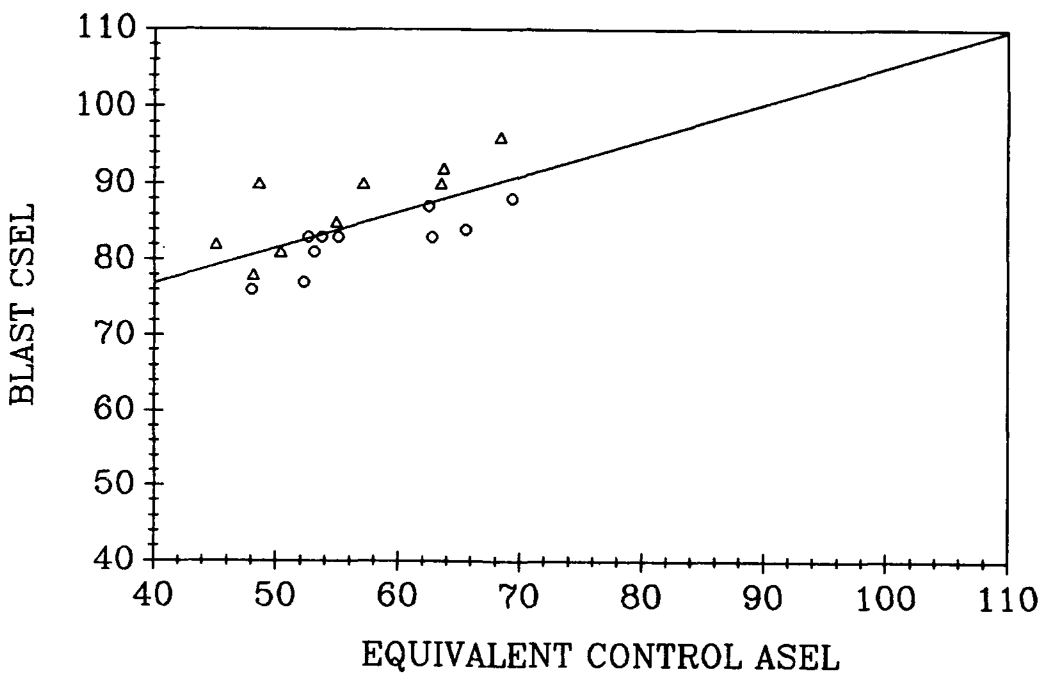
Figure 28. Data and regression lines for earlier results from GTA and APG (solid diamonds) along with the new white-noise control results from Munster (open circles). All of these data are for the windows-closed test condition. At each site, the large charge-size blast sound source was typically about 5 lb (or 2 kg) of explosives (C-4 or military TNT), the small blast sound source was about 500 g of explosives, and the blast site was located about 1 km from the test houses. The new data fit well with the old results. The most important feature of either regression line is its slope. A one decibel change in (indoor) CSEL corresponds to about 2 to 3 decibel change in equivalent control ASEL.

The second half of the test at Munster included both the windows-open and the outdoor test conditions. When the windows are open, the vehicle sound levels increase by about 6 dB, and the blast levels (CSEL) increase by about 10 dB. Figure 29 shows these data for blast sounds. This figure includes just indoor-measured blast data gathered using wheeled-vehicle sound as the control. The circles represent sets 1 through 5, the windows-closed test condition; the triangles represent sets 6 through 10, the windows-open test condition. These two sets of data differ by about 6 dB; the resulting penalty decreases.

This apparent penalty reduction when windows are opened may be illusionary. It presupposes that CSEL (or ASEL) is an appropriate indoor measure for blast noise. Earlier research showed that a quiet rattle sound, not measurable at the subjects' ears using either A- or C-weighting, nevertheless resulted in the equivalent to a 10 dB change in annoyance. So, neither A- nor C-weighting may



a. Bin data.



b. Individual sets.

Figure 29. Indoor-measured blast data gathered using wheeled-vehicle sound as the control. The circles represent sets 1 through 5, the windows-closed tests condition; the trinagles represent sets 6 through 10, the windows-open test condition. These two sets of data differ by about 6 decibels, the change in vehicle sound level when the windows are opened. Figure 29a is for the "bin" data and Figure 29b is the data for individual sets. The resulting regression lines are virtually the same in both figures.

be appropriate measures for predicting indoor blast noise response. We do not know what is appropriate. The conclusion we draw is that present A- or C-weighted acoustical measurements made indoors for blast sounds are inappropriate for annoyance judgments made indoors. But, as is shown below, outdoor C-weighted measurements of blast sound correlate well with judgments made indoors for both conditions of windows open and closed (and even for subjects outdoors).

Figure 30 contains data for the indoor groups (windows open and closed—sets 1 through 10) with the acoustical sound levels measured outdoors. The data only include comparisons using wheeled-vehicle sound as the control, since the loudspeakers were indoors there are no outdoor loudspeaker sound levels. These data (Figure 30 compared to Figure 29) clearly show the greater consistency in using acoustical data measured outdoors for judgments made indoors under differing test conditions. Without labels, one could not tell which points on Figure 30 come from the first five sets (the open circles), which come from the second five sets (the open triangles), and which come from the outdoor group (squares).

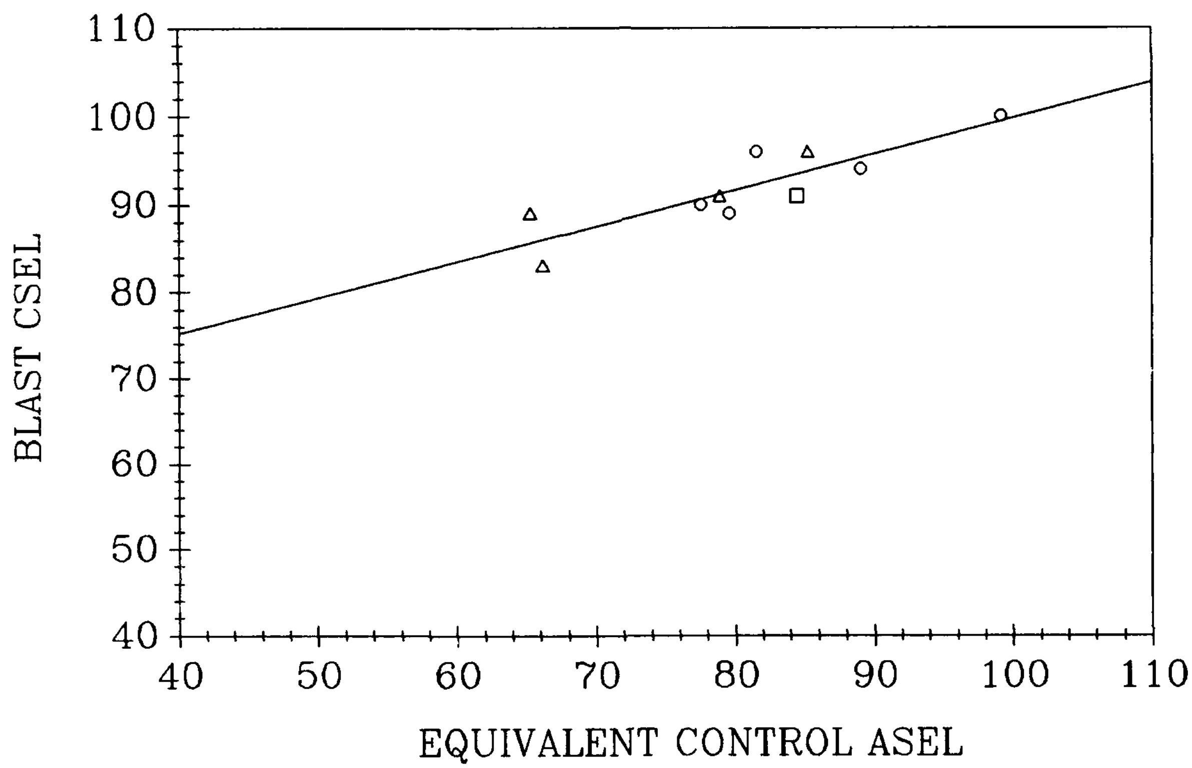


Figure 30. Data for the indoor groups (windows closed (circles) and open (triangles)—sets 1 through 10) with the acoustical sound levels measured outdoors. The data only include comparisons using wheeled-vehicle sound as the control, since the loudspeakers were indoors there are no outdoor loudspeaker sound levels. Figure 30 also contains the data for the outdoor subjects (squares).

Blast Noise Models

The most salient feature to the data in Figure 30 is that the slope found earlier remains when the measurements are made outdoors for sounds judged indoors; a 1-dB change in CSEL of the blast sound corresponds to a 2 dB change in equivalently annoying vehicle control sound ASEL. The crossover point is at about 100 dB. Above a 100 CSEL, the blast noise should include an adjustment or penalty (in addition to measuring with C-weighting), below 100 dB, this penalty becomes a "bonus."

Overall, the combined Munster, APG, and GTA indoor data indicate a slope of 2 or more to 1; a 1 dB change in blast CSEL corresponds to at least a 2-dB change in equivalent control ASEL. In Figure 30, the outdoor data clearly show this same relation; a 1-dB change in blast sound CSEL corresponds to about a 2.4-dB change in equivalent wheeled-vehicle control sound ASEL. This relation has important implications on the appropriate model for blast sound community assessment. Since "normal" community sounds are assessed using A-weighting and *an equal energy* model, blast sound *cannot* be assessed with an equal energy model. If both types of sounds were correctly assessed with an equal energy model, then the slope of the curve in Figure *30* (or Figure 27 *or* Figure 28) would be 1, a 1 dB change in blast CSEL would be equivalent to a 1 dB change in control sound ASEL. But this is clearly not the case. Rather, it appears from this rather large body of data spanning three locations and times and two continents, that blast noise annoyance grows much more rapidly with sound level than would be accounted for by an equal energy hypothesis.

For the following discussion, a "noise unit" will be defined as equal to a unit of sound exposure* for common, A-weighted sounds. With an equal energy model, for common sound, a 3-dB change in level corresponds to a doubling of sound exposure (A-weighted) and a corresponding double of noise units. Sound exposure and noise units would also double if there were two events at the same sound level. This relation between event sound level and number of events is what is meant by the "equal energy hypothesis."

Blast noise annoyance does not appear to fit an equal energy hypothesis. For blast sounds, two (incoherent) events at the same sound level produce double the C-weighted sound exposure (+3 dB), and double the number of equivalent, A-weighted noise units. But, in contrast, a change of +3 dB in the level of a single

* One sound exposure unit is one (Pascal)^2 second as defined in American National Standard *Quantities and Procedure for Assessment of Environmental Sound, Part 1*, ANSI S12.9-1988.

blast produces a much greater change in annoyance response than a doubling of equivalent noise units would indicate. For the line in Figure 30, where the slope is 2.4, a 3 dB change in blast sound level corresponds to almost a 5-fold increase in equivalent, A-weighted noise units. Stated simply, five blasts, each creating a CSEL of "X" correspond to one blast creating a CSEL of "X+3."

This result is reminiscent of the sonic-boom data gathered at Oklahoma City. Those data also showed a much larger growth in annoyance with boom level than can be supported by an equal energy hypothesis. Table 17 lists the Oklahoma City data as used in the National Academy of Science study of high-amplitude impulse noise (National Academy of Science 1981). In this table, A-weighted day-night average sound level (ADNL) is calculated from the percent highly annoyed. Total day-night ASEL is calculated from ADNL by adding 49.4 dB.* Since there were 8 booms per day, 9 decibels are subtracted from this total day-night ASEL to yield an equivalent ASEL per event. This ASEL is equivalent in terms of annoyance to the CSEL for each boom. Figure 31 shows these sonic-boom data. Figure 31 portrays single boom CSEL versus equivalently annoying single event ASEL. The slope is 2.1, and, at about 100 CSEL, CSEL and ASEL are equivalent. The general agreement between the blast and boom data is remarkable.

Time Period	Sonic Boom Levels			Equivalent Community Response		
	Peak (psf)	Peak (dB)	CSEL (dB)	% Highly Annoyed	ADNL (dB)	ASEL (dB)
First	1.13	128.1	102.1	10.5	62.8	103.2
First	0.80	125.1	99.1	7.9	60.4	100.8
First	0.65	123.3	97.3	3.0	52.7	93.1
Second	1.23	128.8	102.8	16.1	66.5	106.9
Second	1.10	127.8	101.8	12.2	64.1	104.5
Second	0.85	125.6	99.6	6.5	58.8	99.2
Third	1.60	131.1	105.1	21.7	69.3	109.7
Third	1.30	129.3	103.3	15.2	66.0	106.4
Third	1.00	127.0	101.0	10.1	62.5	102.9

Table 17. Data taken from the Oklahoma City data as used in the National Academy of Science study of high-amplitude impulse noise. In this table, ADNL is calculated from the percent highly annoyed. Since there were 8 booms per day, 9 decibels are subtracted from ADNL and 49.4 is added to yield a "normal" sound ASEL equivalent in annoyance to the CSEL for each boom.

* 49.4 dB is 10 log (86,400), where 86,400 is the number of seconds in a day.

As an example of the implications of this nonequal-energy model, if the slope of the relation between blast CSEL and equivalent ASEL is 2 and 100 CSEL blast or boom sound is equivalent to a 100 ASEL "normal" sound, then a 110 CSEL blast sound is equivalent to 120 ASEL "normal" sound. But one sound per day having an ASEL of 120 dB constitutes a 70 DNL. So with this relation, one gun blast or boom having a peak level of about 135 dB (a CSEL of 110) would be the equivalent of 70 ADNL for "normal" sound. This result is much more consistent with the Oklahoma City results and Bureau of Mines regulations, which limit blast levels to a peak of 131 dB.* (A mine blast with a peak of 131 dB has a CSEL of about 110-115.) In contrast, the present ANSI S12.4 procedure would indicate an equivalent DNL of only 60 dB for one blast per day creating a CSEL of 110; quite a difference (American National Standard 1988). A 10 dB change in CSEL yields a 20 dB change in equivalent level. Stated another way, one blast producing a 110 CSEL sound would be equivalent to 10,000 blasts, each producing a 90 CSEL sound.

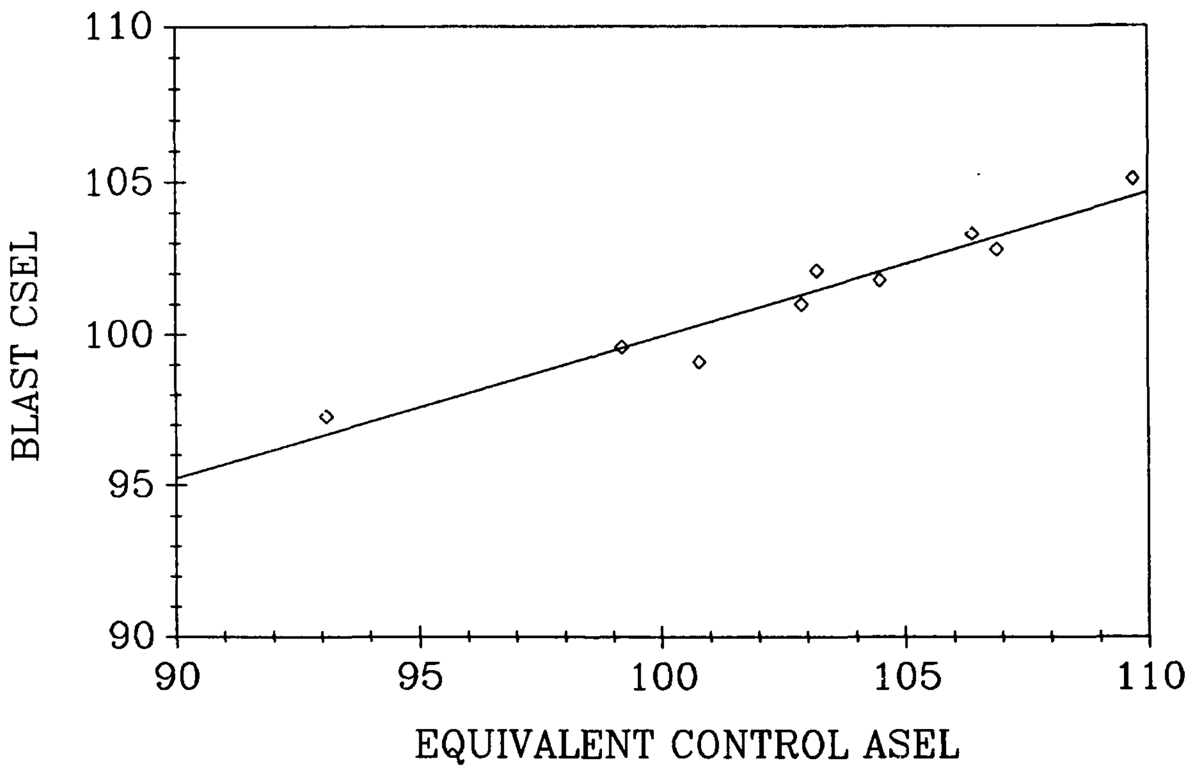


Figure 31. The Oklahoma City sonic-boom data. Single boom CSEL versus equivalently annoying single event ASEL are shown. The slope is 2.1 and at about 100 CSEL, CSEL and ASEL are equivalent.

* A mine explosion having a peak level of 131 dB, has a CSEL of about 110 to 115 dB.

6 Conclusions

Proper assessment of blast noise environments is essential. However, the fact that tests involving real sounds in real houses yield different results from tests using artificial sounds in laboratory settings throws laboratory-based environmental noise assumptions and test methods into doubt. Measured near a subject's ears, the real sound of a vehicle passing is not the same as a computer-generated pink-noise sound; they differ by 10 dB or more in ASEL for equivalent annoyance. To obtain reliable, comparative data, this difference indicates that research should use real sound sources located outdoors, at typical distances, and test subjects situated in real houses.

In this test, subjects were exposed to pairs of given noises, and were asked to compare the two sources and to choose the more annoying of the pair. The results of this test suggest a positive relation between type of noise and the level of annoyance it causes. If the subjects were only judging loudness, then there would be no large difference between results using pink-noise and wheeled vehicle sound.

The data taken in this study support an energy model for small arms, but do not specify an exact value for a penalty. There is some evidence of a level-dependent penalty, but any functional relation is quite complicated. Since indoor dwelling unit environments are normally assessed by *outdoor* measurements, the best guidance indicates a penalty of about 7 to 10 dB, with some values as small as 3-1/2 dB.

For tracked vehicles, with indoor subjects, the penalty is about ±5 dB when the sound is measured outdoors; the penalty reverses sign and is about -3 dB when the sound is measured indoors. With outdoor subjects, the penalty is only about +1.5 dB.

Blast noise is no amenable to a simple penalty—even if measured using C-weighting. For a 1-dB change in blast sound CSEL, the equivalent control sound ASEL changes by at least 2 dB. This "trading-ratio" result is consistent across conditions and tests in this study and is supported by results of earlier tests at Grafenwöhr, Germany and Aberdeen, MD. The results of this test are also consistent with sonic boom data taken in a study done in Oklahoma City.

The results of the studies done at Munster, APG, and Grafenwöhr clearly show that an equal energy model overestimates the importance of many low-level events

and underestimates the importance of a few high-level events. The importance of this observation should not be underestimated. These results indicate that one event creating a CSEL of 110 dB is equivalent to about 10,000 events creating a CSEL of 90 dB. (Under an equal energy model, the ratio would be 1 to 100, not 1 to 10,000.) One event producing 110 CSEL creates an environment equivalent to about 70 ADNL or higher.

Thus, a proper, high-amplitude impulse noise model does not appear to be an equal energy model. Rather, each event must be converted to "equivalent A-weighted annoyance units," which can then be summed to total the equivalent environment.

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Appendix A: Subject Response Data and Transition Analysis Curves for Small Arms and Tracked and Wheeled Vehicles

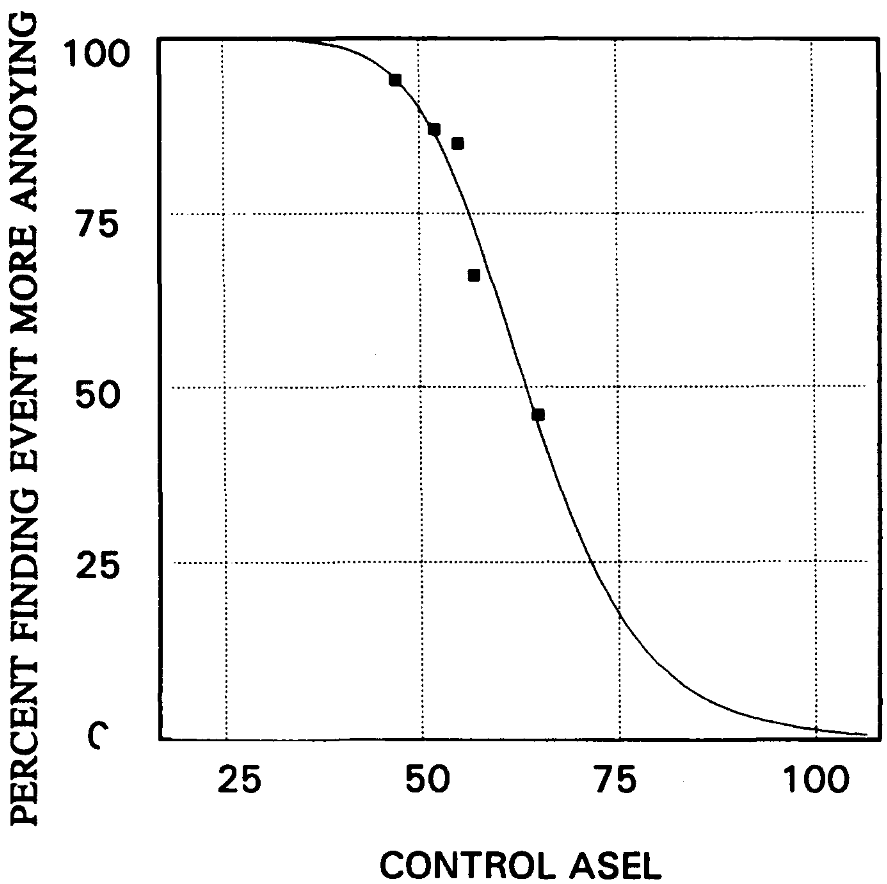


Figure A1

Test Source: Near Gun, 60
Condition: Windows Closed
Control Source: Vehicles
Data Included: Sets 1-5

NEAR GUN 60, FIRST HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0	100	100.1	−0.149	−0.149	0.0
2	5	100	100.1	−0.149	−0.149	500.7
3	10	100	100.1	−0.149	−0.149	1001.5
4	15	100	100.1	−0.148	−0.148	1502.2
5	47	94	94.2	−0.178	−0.189	4678.6
6	52	87	86.3	0.671	0.771	5131.9
7	55	85	79.0	5.997	7.056	5380.4
8	57	66	73.0	−7.028	−10.649	5532.6
9	65	46	44.7	1.296	2.818	6005.3
10	110	0	0.3	−0.298	0.000	6465.4
11	115	0	0.1	−0.080	0.000	6466.3
12	120	0	−0.1	0.061	0.000	6466.4
13	125	0	−0.2	0.153	0.000	6465.8
X@50Y	63.5					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.1					
F−stat	802.0					
Confidence	90.0					
A	−0.4	C	63.5			
A StdErr	1.6	C StdErr	0.8			
A t	−0.2	C t	78.1			
A ConfLimits	−3.3	C ConfLimits	62.1			
	2.6		65.0			
B	100.5	D	9.2			
B StdErr	2.3	D StdErr	1.0			
B t	44.0	D t	9.1			
B ConfLimits	96.3	D ConfLimits	7.3			
	104.7		11.0			

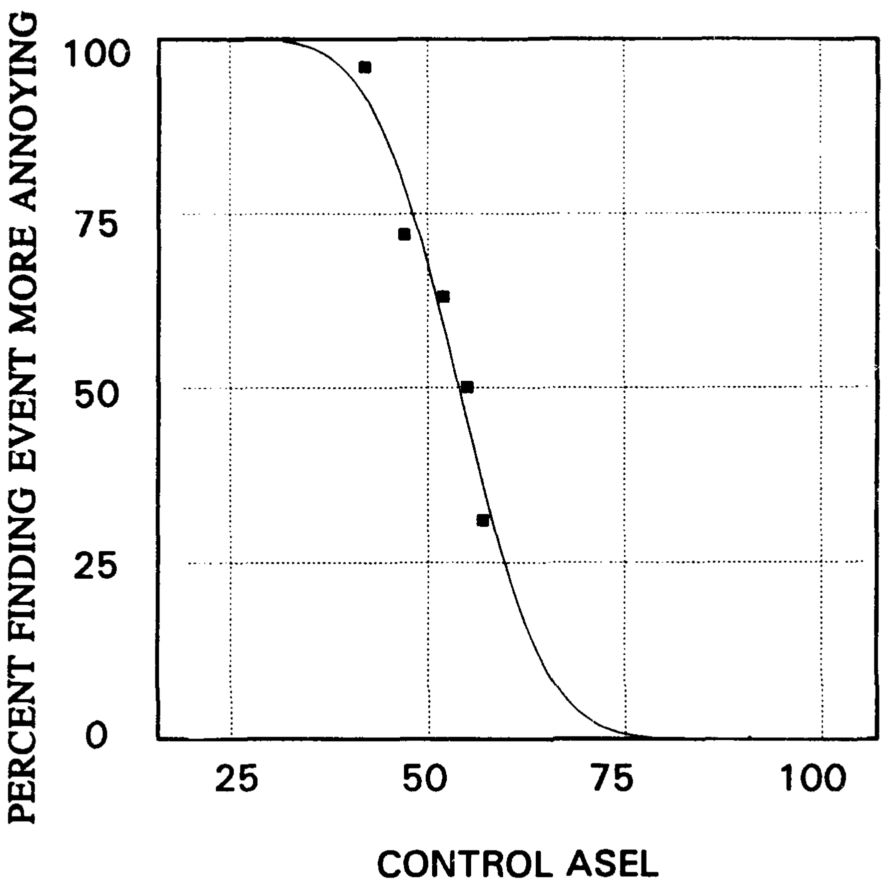


Figure A2

Test Source: Near Gun, 6
Condition: Windows Closed
Control Source: Vehicles
Data Included: Sets 1-5

NEAR GUN 6, FIRST HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0	100	100.2	−0.158	−0.158	0.0
2	5	100	100.2	−0.158	−0.158	500.8
3	10	100	100.2	−0.158	−0.158	1001.6
4	15	100	100.2	−0.158	−0.158	1502.4
5	42	96	91.9	4.085	4.255	4174.3
6	47	72	79.2	−7.189	−9.985	4605.4
7	52	63	59.1	3.911	6.208	4953.6
8	55	50	45.2	4.760	9.519	5110.2
9	57	31	36.2	−5.224	−16.850	5191.5
10	110	0	−0.1	0.072	0.000	5400.9
11	115	0	−0.1	0.072	0.000	5400.5
12	120	0	−0.1	0.072	0.000	5400.1
13	125	0	−0.1	0.072	0.000	5399.8
X@50Y	54					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.9					
F−stat	509.3					
Confidence	90.0					
A	−0.1	C	54.0			
A StdErr	1.9	C StdErr	0.6			
A t	−0.0	C t	96.9			
A ConfLimits	−3.6	C ConfLimits	52.9			
	3.5		55.0			
B	100.2	D	−8.6			
B StdErr	2.7	D StdErr	1.0			
B t	36.9	D t	−8.4			
B ConfLimits	95.3	D ConfLimits	−10.5			
	105.2		−6.7			

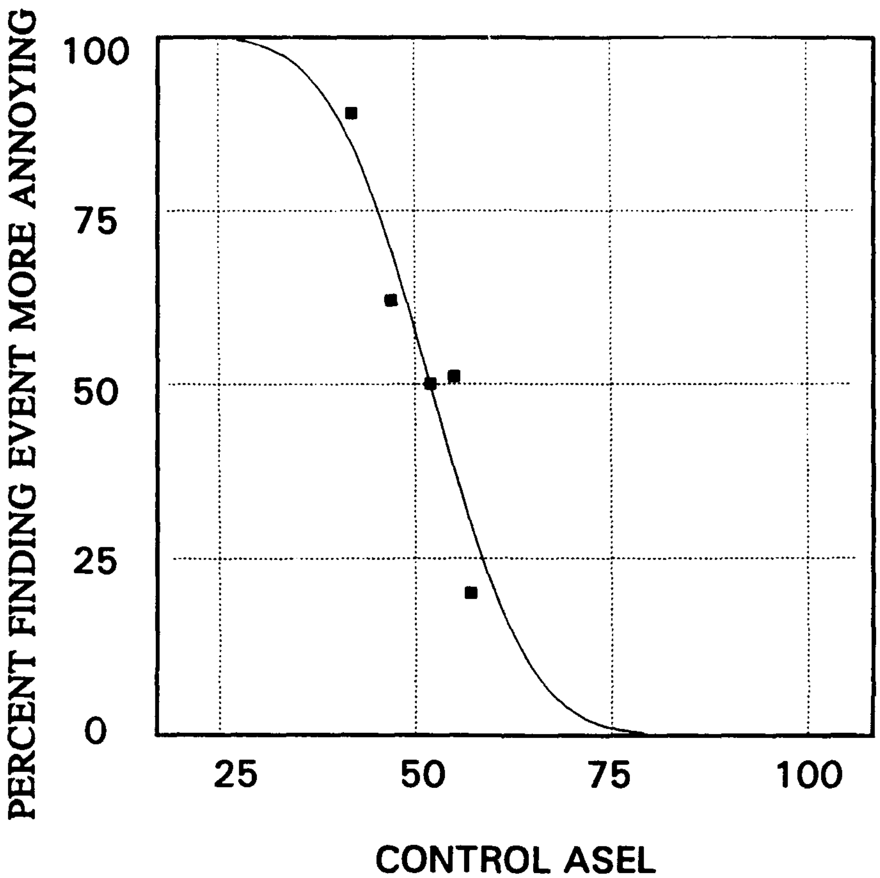


Figure A3

Test Source: Far Gun, 60
Condition: Windows Closed
Control Source: Vehicles
Data Included: Sets 1-5

FAR GUN 60, FIRST HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.1	−0.143	−0.143	0.0
2	5.0		100.0	100.1	−0.143	−0.143	500.7
3	10.0		100.0	100.1	−0.142	−0.142	1001.4
4	15.0		100.0	100.1	−0.135	−0.135	1502.1
5	42.0		89.0	84.7	4.346	4.884	4127.0
6	47.0		62.0	69.4	−7.413	−11.957	4514.6
7	52.0		50.0	49.8	0.215	0.430	4813.7
8	55.0		51.0	37.7	13.288	26.055	4944.8
9	57.0		20.0	30.2	−10.216	−51.080	5012.6
10	110.0		0.0	−0.1	0.086	0.000	5196.5
11	115.0		0.0	−0.1	0.086	0.000	5196.1
12	120.0		0.0	−0.1	0.086	0.000	5195.6
13	125.0		0.0	−0.1	0.086	0.000	5195.2
X@50Y	51.9						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	6.3						
F−stat	187.4						
Confidence	90.0						
A	100.1	C		51.9			
A StdErr	3.1	C StdErr		1.0			
A t	32.0	C t		52.1			
A ConfLimits	94.4	C ConfLimits		50.1			
	105.9			53.8			
B	−100.2	D		9.8			
B StdErr	4.4	D StdErr		1.7			
B t	−22.6	D t		5.6			
B ConfLimits	−108.4	D ConfLimits		6.6			
	−92.1			13.0			

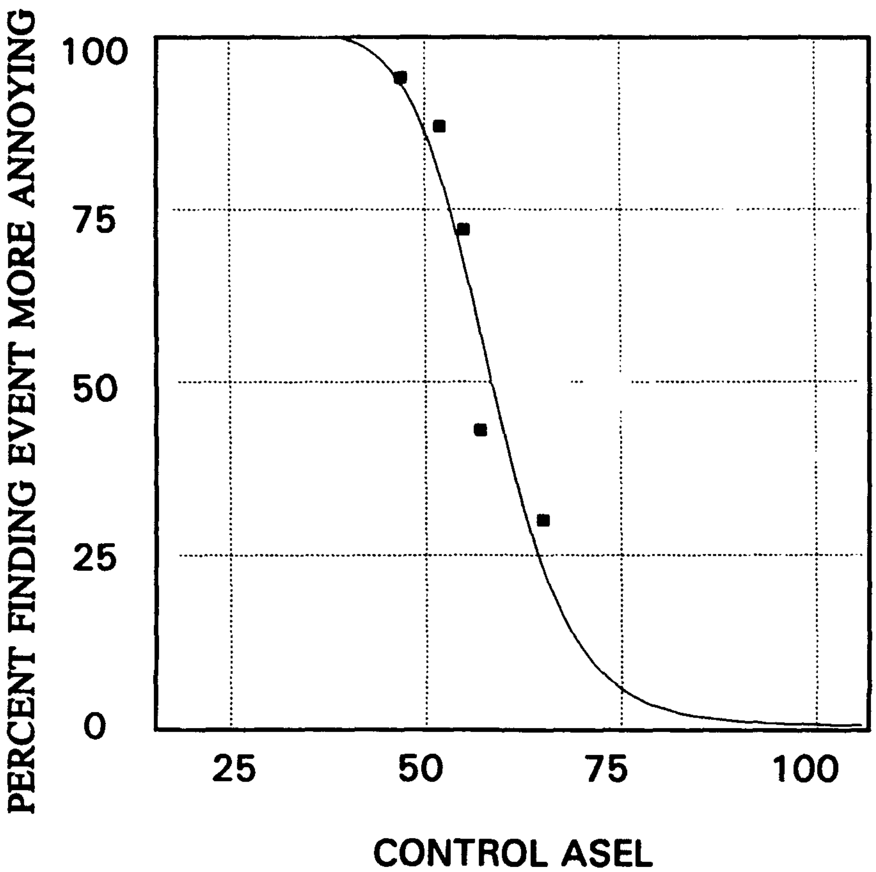


Figure A4

Test Source: Leopard II
Condition: Windows Closed
Control Source: Vehicles
Data Included: Sets 1-5

LEOPARD II, FIRST HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.8	−0.766	−0.766	0.0
2	5.0	100.0	100.8	−0.766	−0.766	503.8
3	10.0	100.0	100.8	−0.766	−0.766	1007.7
4	15.0	100.0	100.8	−0.766	−0.766	1511.5
5	47.0	94.0	93.1	0.858	0.913	4706.3
6	52.0	87.0	79.8	7.180	8.253	5142.8
7	55.0	72.0	67.2	4.843	6.726	5364.1
8	57.0	43.0	57.4	−14.434	−33.566	5488.8
9	65.0	30.0	23.0	7.000	23.334	5799.7
10	110.0	0.0	0.6	−0.626	0.000	5981.8
11	115.0	0.0	0.6	−0.599	0.000	5984.9
12	120.0	0.0	0.6	−0.583	0.000	5987.8
13	125.0	0.0	0.6	−0.574	0.000	5990.7
X@50Y	58.5					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.1					
F–stat	208.9					
Confidence	90.0					
A	0.6	C	58.4			
A StdErr	3.1	C StdErr	1.0			
A t	0.2	C t	60.9			
A ConfLimits	−5.1	C ConfLimits	56.6			
	6.2		60.1			
B	100.2	D	11.5			
B StdErr	4.3	D StdErr	2.1			
B t	23.2	D t	5.5			
B ConfLimits	92.3	D ConfLimits	7.7			
	108.1		15.4			

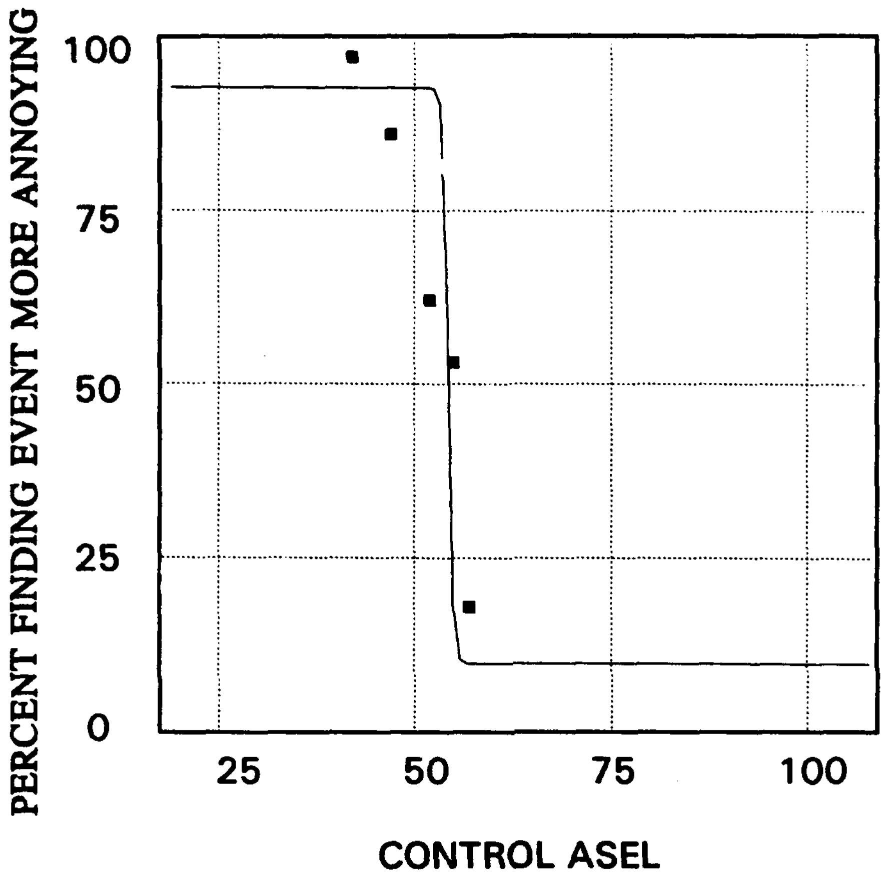


Figure A5

Test Source: Marder
Condition: Windows Closed
Control Source: Vehicles
Data Included: Sets 1-5

MARDER, FIRST HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	92.6	7.359	7.359	0.0
2	5.0	100.0	92.6	7.359	7.359	463.2
3	10.0	100.0	92.6	7.359	7.359	926.4
4	15.0	100.0	92.6	7.359	7.359	1389.6
5	42.0	97.0	92.6	4.359	4.494	3890.9
6	47.0	86.0	92.6	−6.641	−7.722	4354.1
7	52.0	62.0	92.6	−30.620	−49.387	4817.3
8	55.0	53.0	18.1	34.918	65.883	5038.9
9	57.0	18.0	9.9	8.100	45.002	5068.5
10	110.0	0.0	9.9	−9.888	0.000	5639.1
11	115.0	0.0	9.9	−9.888	0.000	5812.7
12	120.0	0.0	9.9	−9.888	0.000	5517.9
13	125.0	0.0	9.9	−9.888	0.000	5746.4
X@50Y	54.4					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	0.8					
r2	0.9					
Fit StdErr	17.9					
F–stat	22.2					
Confidence	90.0					
A	9.9	C	71.2			
A StdErr	7.4					
A t	1.3					
A ConfLimits	−3.8					
	23.5					
B	82.8	D	−1.0			
B StdErr	10.1					
B t	8.2					
B ConfLimits	64.2					
	101.3					

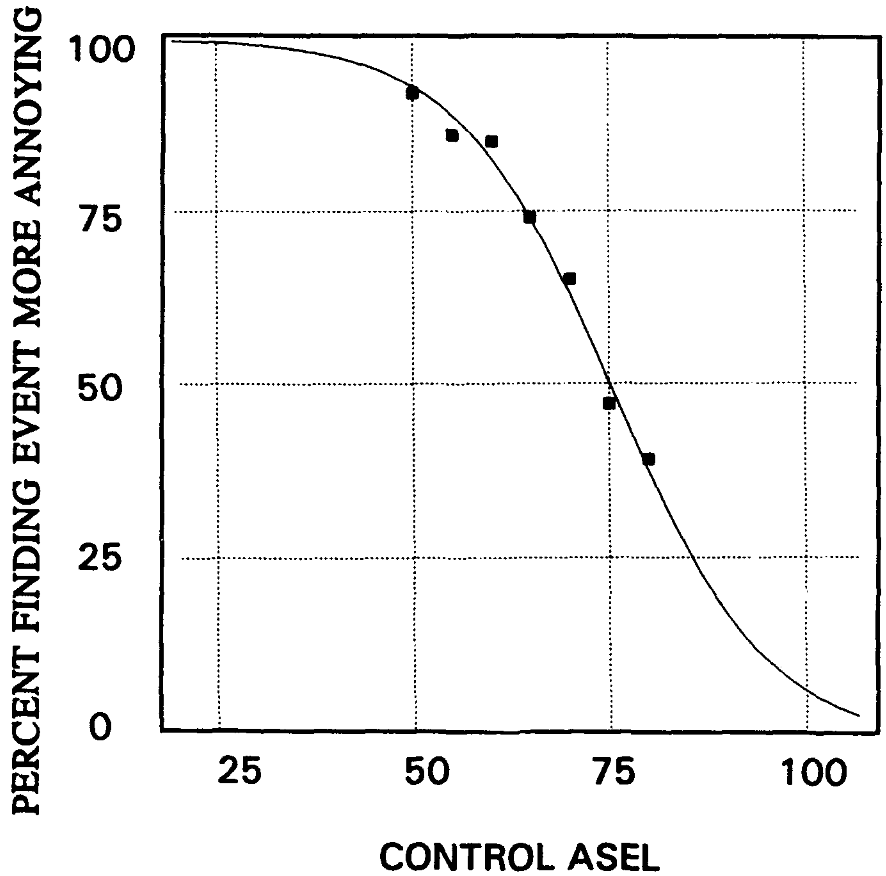


Figure A6

Test Source: Near Gun, 60
Condition: Windows Closed
Control Source: White Noise
Data Included: Sets 1-5

NEAR GUN 60, FIRST HALF–NOISE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	99.8	0.205	0.205	0.0
2	5.0		100.0	99.8	0.234	0.234	498.9
3	10.0		100.0	99.7	0.284	0.284	997.6
4	15.0		100.0	99.6	0.366	0.366	1496.0
5	50.0		92.0	92.9	−0.895	−0.973	4922.3
6	55.0		86.0	88.8	−2.750	−3.198	5377.1
7	60.0		85.0	82.6	2.417	2.844	5806.4
8	65.0		74.0	74.0	0.031	0.042	6198.8
9	70.0		65.0	62.9	2.059	3.168	6542.0
10	75.0		47.0	50.3	−3.298	−7.016	6825.5
11	80.0		39.0	37.5	1.489	3.818	7044.8
12	110.0		0.0	1.3	−1.321	0.000	7451.5
13	115.0		0.0	0.2	−0.200	0.000	7455.0
14	120.0		0.0	−0.5	0.483	0.000	7454.2
15	125.0		0.0	−0.9	0.897	0.000	7450.7
X@50Y	75.1						
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	1.8						
F−stat	2528.6						
Confidence	90.0						
A	−1.5	C		75.4			
A StdErr	1.0	C StdErr		0.5			
A t	−1.5	C t		149.9			
A ConfLimits	−3.4	C ConfLimits		74.5			
	0.3			76.3			
B	101.4	D		−9.7			
B StdErr	1.5	D StdErr		0.5			
B t	69.5	D t		−18.4			
B ConfLimits	98.7	D ConfLimits		−10.7			
	104.0			−8.8			

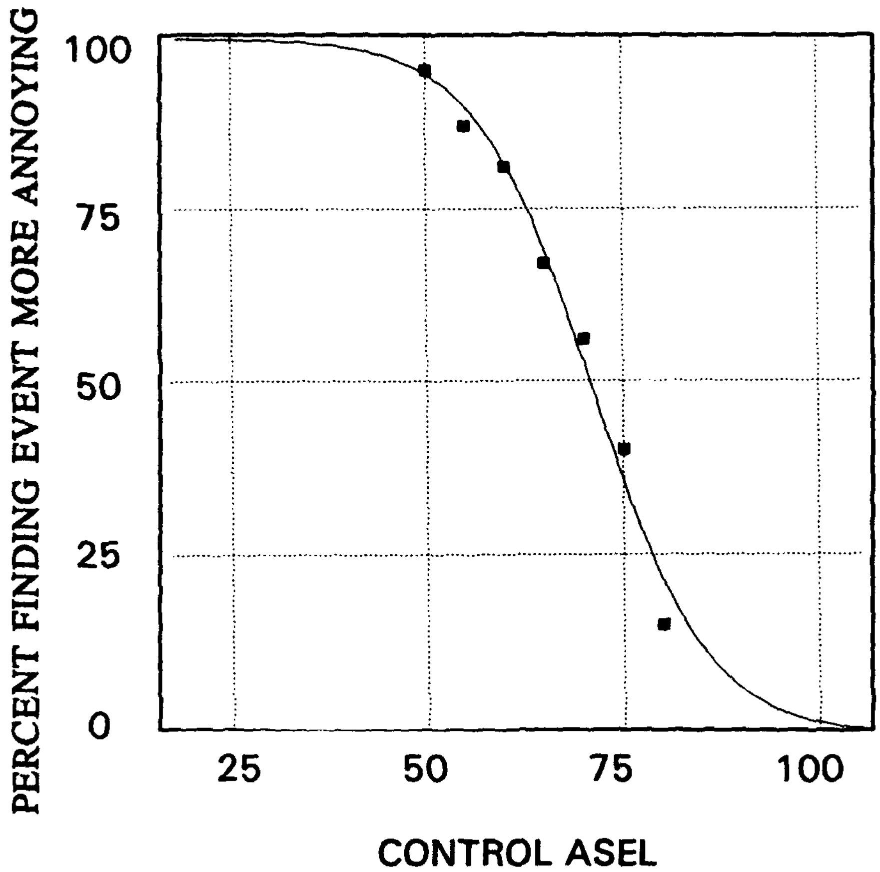


Figure A7

Test Source: Leopard II
Condition: Windows Closed
Control Source: White Noise
Data Included: Sets 1-5

LEOPARD II, FIRST HALF—NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.6	0.441	0.441	0.0
2	5.0	100.0	99.6	0.446	0.446	497.8
3	10.0	100.0	99.5	0.457	0.457	995.5
4	15.0	100.0	99.5	0.478	0.478	1493.2
5	50.0	95.0	94.4	0.608	0.640	4940.1
6	55.0	87.0	89.7	−2.706	−3.110	5401.5
7	60.0	81.0	81.6	−0.579	−0.714	5831.4
8	65.0	67.0	69.0	−2.017	−3.010	6209.8
9	70.0	56.0	52.7	3.315	5.919	6515.1
10	75.0	40.0	35.6	4.362	10.906	6735.4
11	80.0	15.0	21.5	−6.473	−43.151	6876.4
12	110.0	0.0	−0.2	0.186	0.000	7034.1
13	115.0	0.0	−0.4	0.403	0.000	7032.6
14	120.0	0.0	−0.5	0.512	0.000	7030.3
15	125.0	0.0	−0.6	0.566	0.000	7027.5
X@50Y	70.8					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.8					
F−stat	1086.4					
Confidence	90.0					
A	−0.6	C	70.9			
A StdErr	1.4	C StdErr	0.6			
A t	−0.4	C t	128.8			
A ConfLimits	−3.2	C ConfLimits	69.9			
	1.9		71.9			
B	100.2	D	−7.2			
B StdErr	2.0	D StdErr	0.5			
B t	50.4	D t	−14.0			
B ConfLimits	96.6	D ConfLimits	−8.1			
	103.8		−6.3			

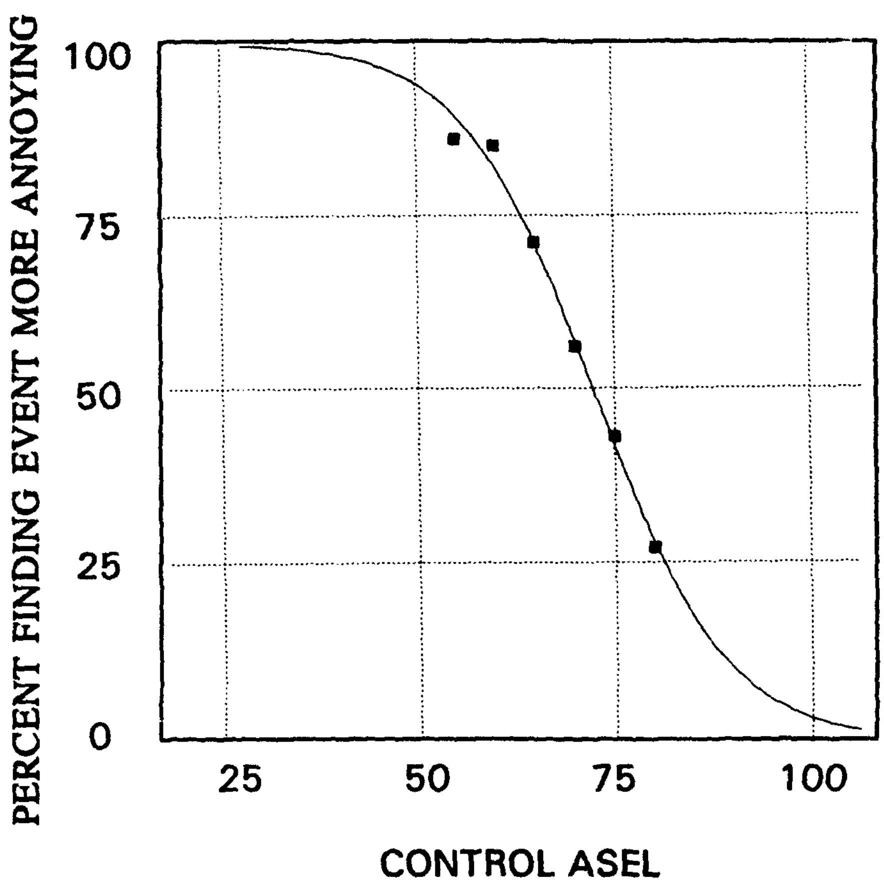


Figure A8

Test Source: Vehicle 2
Condition: Windows Closed
Control Source: Vehicles
Data Included: Sets 1-5

VEHICLE 2, FIRST HALF–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.8	0.174	0.174	0.0
2	5.0	100.0	99.8	0.185	0.185	499.1
3	10.0	100.0	99.8	0.207	0.207	998.1
4	15.0	100.0	99.8	0.246	0.246	1497.0
5	55.0	86.0	89.3	−3.300	−3.837	5400.8
6	60.0	85.0	81.9	3.061	3.601	5830.2
7	65.0	71.0	71.1	−0.084	−0.118	6214.3
8	70.0	56.0	57.1	−1.061	−1.895	6535.7
9	75.0	43.0	41.7	1.252	2.912	6782.7
10	80.0	27.0	27.8	−0.810	−3.002	6955.5
11	110.0	0.0	0.5	−0.456	0.000	7202.5
12	115.0	0.0	0.0	−0.010	0.000	7203.6
13	120.0	0.0	−0.2	0.232	0.000	7203.0
14	125.0	0.0	−0.4	0.364	0.000	7201.5
X@50Y	72.3					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	1.6					
F−stat	3201.7					
Confidence	90.0					
A	−0.5	C	72.4			
A StdErr	0.8	C StdErr	0.3			
A t	−0.6	C t	210.2			
A ConfLimits	−2.0	C ConfLimits	71.8			
	1.0		73.0			
B	100.4	D	−8.1			
B StdErr	1.2	D StdErr	0.3			
B t	87.3	D t	−23.3			
B ConfLimits	98.3	D ConfLimits	−8.8			
	102.4		−7.5			

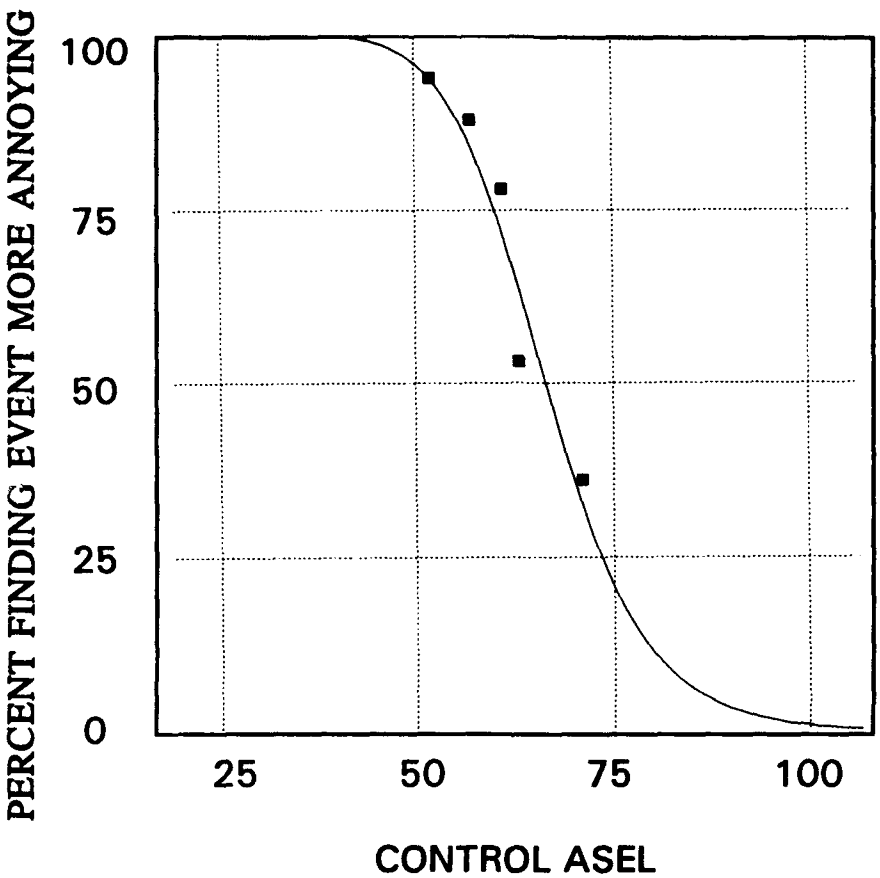


Figure A9

Test Source: Near Gun, 60
Condition: Windows Open
Control Source: Vehicles
Data Included: Sets 6-10

NEAR GUN 60, SECOND HALF–VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.441	−0.441	0.0
2	5.0	100.0	100.4	−0.441	−0.441	502.2
3	10.0	100.0	100.4	−0.441	−0.441	1004.4
4	15.0	100.0	100.4	−0.441	−0.441	1506.6
5	52.0	94.0	93.9	0.134	0.142	5193.3
6	57.0	88.0	84.4	3.648	4.145	5641.6
7	61.0	78.0	71.8	6.247	8.009	5955.2
8	63.0	53.0	64.0	−11.035	−20.821	6091.1
9	71.0	36.0	32.4	3.561	9.891	6473.3
10	110.0	0.0	0.4	−0.373	0.000	6751.4
11	115.0	0.0	0.2	−0.219	0.000	6752.9
12	120.0	0.0	0.1	−0.127	0.000	6753.7
13	125.0	0.0	0.1	−0.071	0.000	6754.2
X@50Y	66.4					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.6					
F−stat	374.3					
Confidence	90.0					
A	−0.0	C	66.3			
A StdErr	2.3	C StdErr	0.9			
A t	−0.0	C t	74.2			
A ConfLimits	−4.3	C ConfLimits	64.7			
	4.3		68.0			
B	100.5	D	10.9			
B StdErr	3.3	D StdErr	1.5			
B t	30.7	D t	7.1			
B ConfLimits	94.5	D ConfLimits	8.1			
	106.5		13.7			

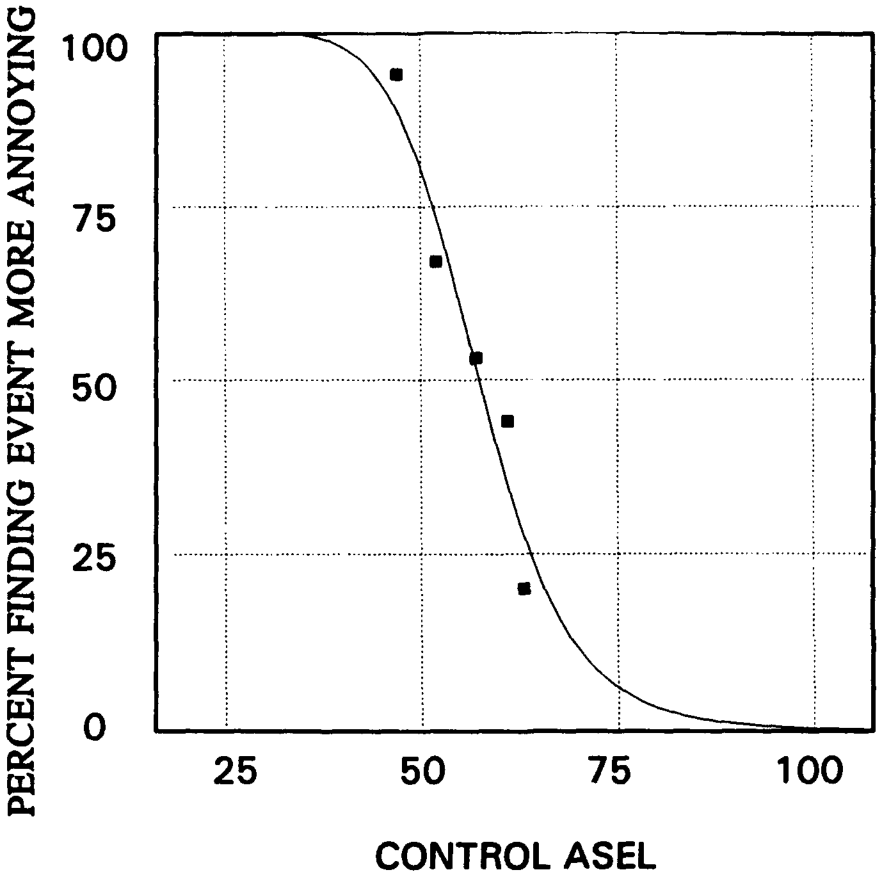


Figure A10

Test Source: Near Gun, 6
Condition: Windows Open
Control Source: Vehicles
Data Included: Sets 6-10

NEAR GUN 6, SECOND HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	−0.2	100.169	100.169	0.0
2	5.0	100.0	100.3	−0.325	−0.325	501.6
3	10.0	100.0	100.3	−0.325	−0.325	1003.2
4	15.0	100.0	100.3	−0.325	−0.325	1504.9
5	47.0	94.0	88.9	5.147	5.476	4664.5
6	52.0	67.0	73.6	−6.562	−9.793	5074.0
7	57.0	53.0	51.9	1.089	2.055	5389.1
8	61.0	44.0	34.9	9.058	20.586	5561.9
9	63.0	20.0	27.8	−7.813	−39.064	5624.4
10	110.0	0.0	−0.0	0.041	0.000	5840.4
11	115.0	0.0	−0.1	0.088	0.000	5840.1
12	120.0	0.0	−0.1	0.116	0.000	5839.6
13	125.0	0.0	−0.1	0.134	0.000	5839.0
X@50Y	57.4					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.9					
F−stat	320.5					
Confidence	90.0					
A	100.3	C	57.4			
A StdErr	2.4	C StdErr	0.8			
A t	41.7	C t	75.6			
A ConfLimits	95.9	C ConfLimits	56.0			
	104.7		58.8			
B	−100.5	D	−10.2			
B StdErr	3.5	D StdErr	1.4			
B t	−29.0	D t	−7.1			
B ConfLimits	−106.9	D ConfLimits	−12.9			
	−94.1		−7.6			

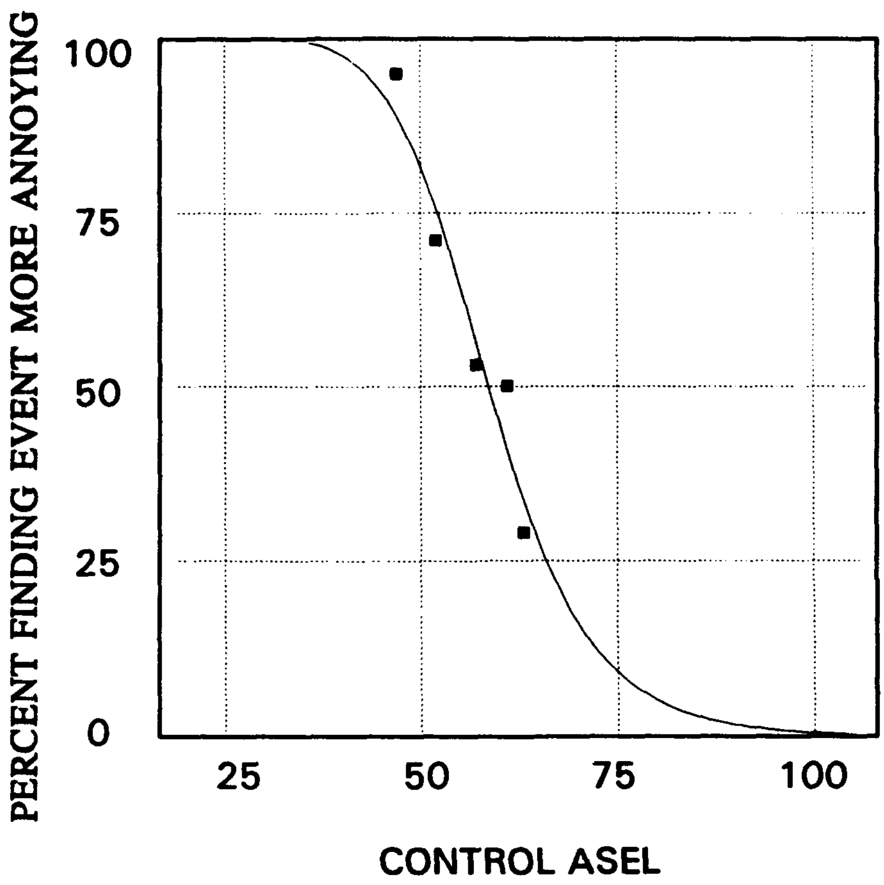


Figure A11

Test Source: Far Gun, 60
Condition: Windows Open
Control Source: Vehicles
Data Included: Sets 6-10

FAR GUN 60, SECOND HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.5	−0.497	−0.497	0.0
2	5.0		100.0	100.5	−0.497	−0.497	502.5
3	10.0		100.0	100.5	−0.497	−0.497	1005.0
4	15.0		100.0	100.5	−0.497	−0.497	1507.5
5	47.0		95.0	89.0	6.016	6.332	4667.7
6	52.0		71.0	75.5	−4.516	−6.361	5081.7
7	57.0		53.0	56.6	−3.581	−6.757	5413.4
8	61.0		50.0	40.9	9.115	18.229	5607.9
9	63.0		29.0	33.9	−4.856	−16.744	5682.5
10	110.0		0.0	0.2	−0.162	0.000	5991.9
11	115.0		0.0	0.1	−0.064	0.000	5992.5
12	120.0		0.0	0.0	−0.002	0.000	5992.6
13	125.0		0.0	−0.0	0.039	0.000	5992.5
X@50Y	58.6						
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	4.4						
F–stat	382.2						
Confidence	90.0						
A	−0.1	C		58.6			
A StdErr	2.3	C StdErr		0.8			
A t	−0.1	C t		77.6			
A ConfLimits	−4.3	C ConfLimits		57.2			
	4.0			60.0			
B	100.6	D		9.3			
B StdErr	3.2	D StdErr		1.3			
B t	31.6	D t		7.3			
B ConfLimits	94.8	D ConfLimits		6.9			
	106.5			11.6			

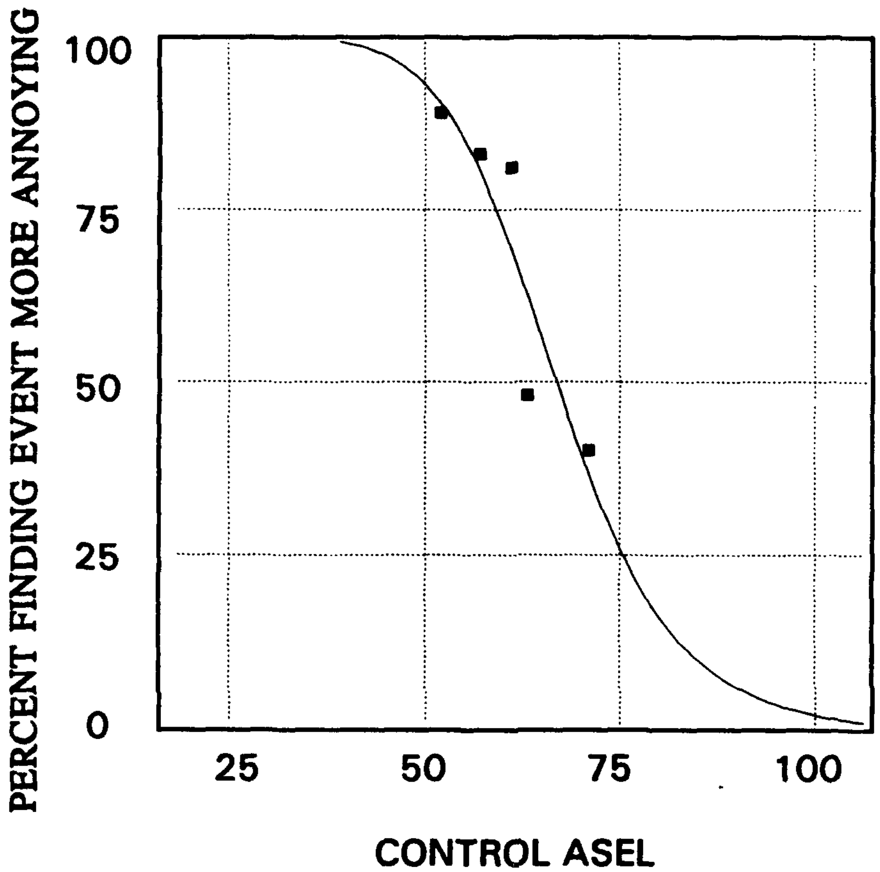


Figure A12

Test Source: Leopard II
Condition: Windows Open
Control Source: Vehicles
Data Included: Sets 6-10

LEOPARD II, SECOND HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.103	−0.103	0.0
2	5.0	100.0	100.1	−0.103	−0.103	500.5
3	10.0	100.0	100.1	−0.103	−0.103	1001.0
4	15.0	100.0	100.1	−0.102	−0.102	1501.5
5	52.0	89.0	90.5	−1.519	−1.707	5152.8
6	57.0	83.0	80.7	2.331	2.809	5582.8
7	61.0	81.0	69.4	11.604	14.326	5883.9
8	63.0	48.0	62.9	−14.915	−31.073	6016.2
9	71.0	40.0	36.6	3.386	8.466	6412.2
10	110.0	0.0	0.6	−0.567	0.000	6793.9
11	115.0	0.0	0.2	−0.189	0.000	6795.7
12	120.0	0.0	−0.1	0.057	0.000	6796.0
13	125.0	0.0	−0.2	0.221	0.000	6795.3
X@50Y	66.2					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.5					
F−stat	180.4					
Confidence	90.0					
A	−0.6	C	66.9			
A StdErr	3.5	C StdErr	1.6			
A t	−0.2	C t	42.5			
A ConfLimits	−7.0	C ConfLimits	64.0			
	5.8		69.8			
B	100.7	D	8.9			
B StdErr	4.9	D StdErr	1.9			
B t	20.6	D t	4.7			
B ConfLimits	91.7	D ConfLimits	5.4			
	109.6		12.5			

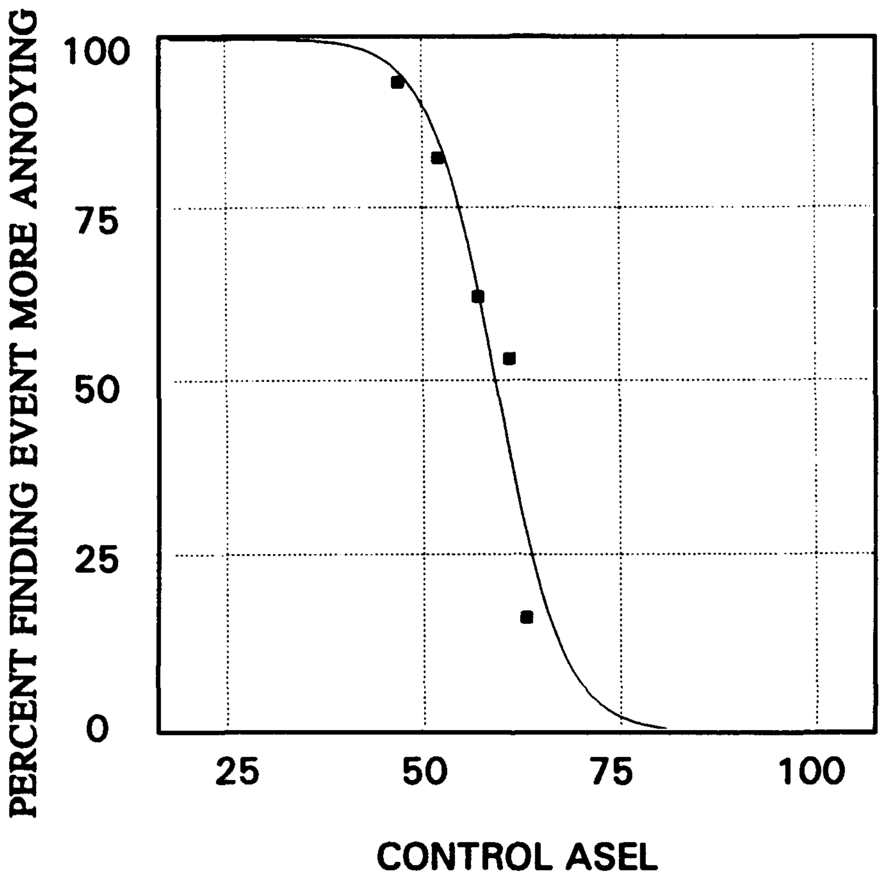


Figure A13

Test Source: Marder
Condition: Windows Open
Control Source: Vehicles
Data Included: Sets 6-10

MARDER, SECOND HALF–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.3	0.699	0.699	0.0
2	5.0	100.0	99.3	0.699	0.699	496.5
3	10.0	100.0	99.3	0.700	0.700	993.0
4	15.0	100.0	99.3	0.701	0.701	1489.5
5	47.0	93.0	94.5	−1.519	−1.634	4647.0
6	52.0	82.0	84.9	−2.853	−3.479	5099.3
7	57.0	62.0	63.1	−1.099	−1.772	5474.8
8	61.0	53.0	39.4	13.596	25.653	5680.1
9	63.0	16.0	28.5	−12.542	−78.389	5747.7
10	110.0	0.0	−0.4	0.404	0.000	5869.7
11	115.0	0.0	−0.4	0.405	0.000	5867.5
12	120.0	0.0	−0.4	0.405	0.000	5865.7
13	125.0	0.0	−0.4	0.405	0.000	5863.7
X@50Y	59.2					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.3					
F–stat	198.5					
Confidence	90.0					
A	−0.4	C	59.3			
A StdErr	3.1	C StdErr	0.8			
A t	−0.1	C t	77.2			
A ConfLimits	−6.2	C ConfLimits	57.9			
	5.4		60.7			
B	99.7	D	−4.1			
B StdErr	4.4	D StdErr	0.8			
B t	22.7	D t	−5.2			
B ConfLimits	91.7	D ConfLimits	−5.6			
	107.7		−2.7			

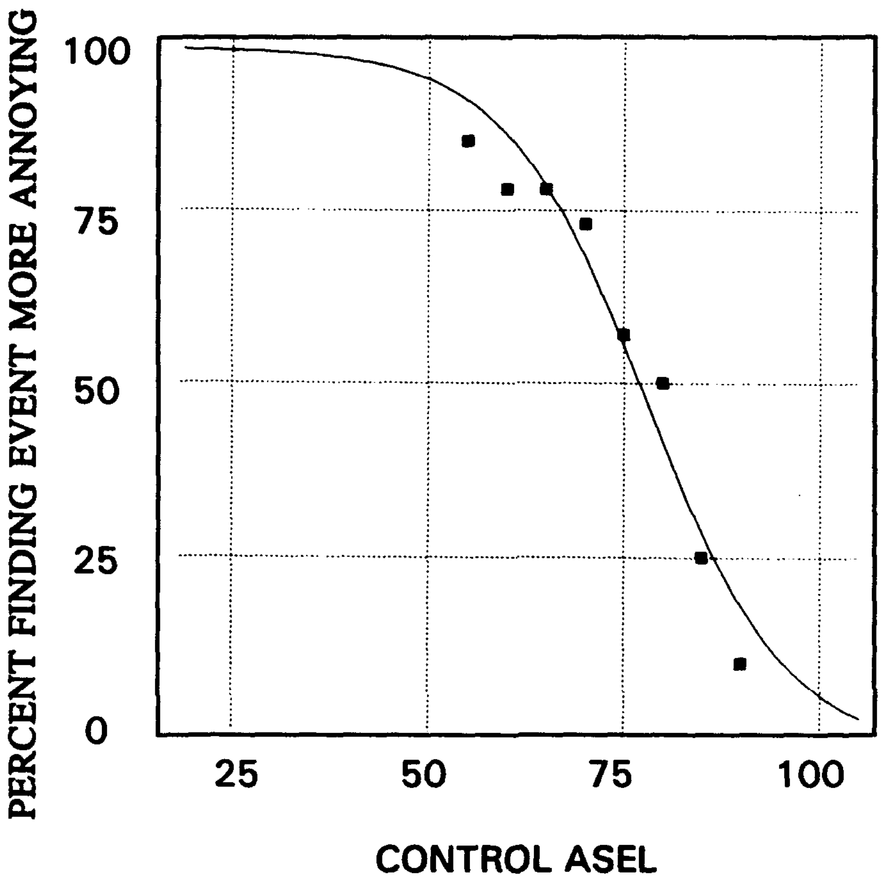


Figure A14

Test Source: Near Gun, 60
Condition: Windows Open
Control Source: White Noise
Data Included: Sets 6-10

NEAR GUN 60, SECOND HALF–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	98.1	1.868	1.868	0.0
2	5.0	100.0	98.1	1.881	1.881	490.6
3	10.0	100.0	98.1	1.904	1.904	981.2
4	15.0	100.0	98.1	1.944	1.944	1471.6
5	55.0	85.0	90.7	−5.718	−6.727	5328.9
6	60.0	78.0	85.9	−7.873	−10.093	5771.3
7	65.0	78.0	78.5	−0.534	−0.685	6183.5
8	70.0	73.0	68.3	4.708	6.449	6551.7
9	75.0	57.0	55.5	1.480	2.596	6862.1
10	80.0	50.0	41.7	8.348	16.697	7105.1
11	85.0	25.0	28.7	−3.683	−14.734	7280.2
12	90.0	10.0	18.1	−8.146	−81.457	7396.0
13	110.0	0.0	0.3	−0.332	0.000	7530.2
14	115.0	0.0	−0.8	0.810	0.000	7528.7
15	120.0	0.0	−1.5	1.478	0.000	7522.9
16	125.0	0.0	−1.9	1.865	0.000	7514.4
X@50Y	79.5					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.9					
F−stat	346.6					
Confidence	90.0					
A	−2.4	C	77.8			
A StdErr	2.8	C StdErr	1.2			
A t	−0.8	C t	66.1			
A ConfLimits	−7.4	C ConfLimits	75.7			
	2.6		79.9			
B	100.5	D	−9.0			
B StdErr	3.9	D StdErr	1.1			
B t	25.8	D t	−8.3			
B ConfLimits	93.6	D ConfLimits	−10.9			
	107.5		−7.1			

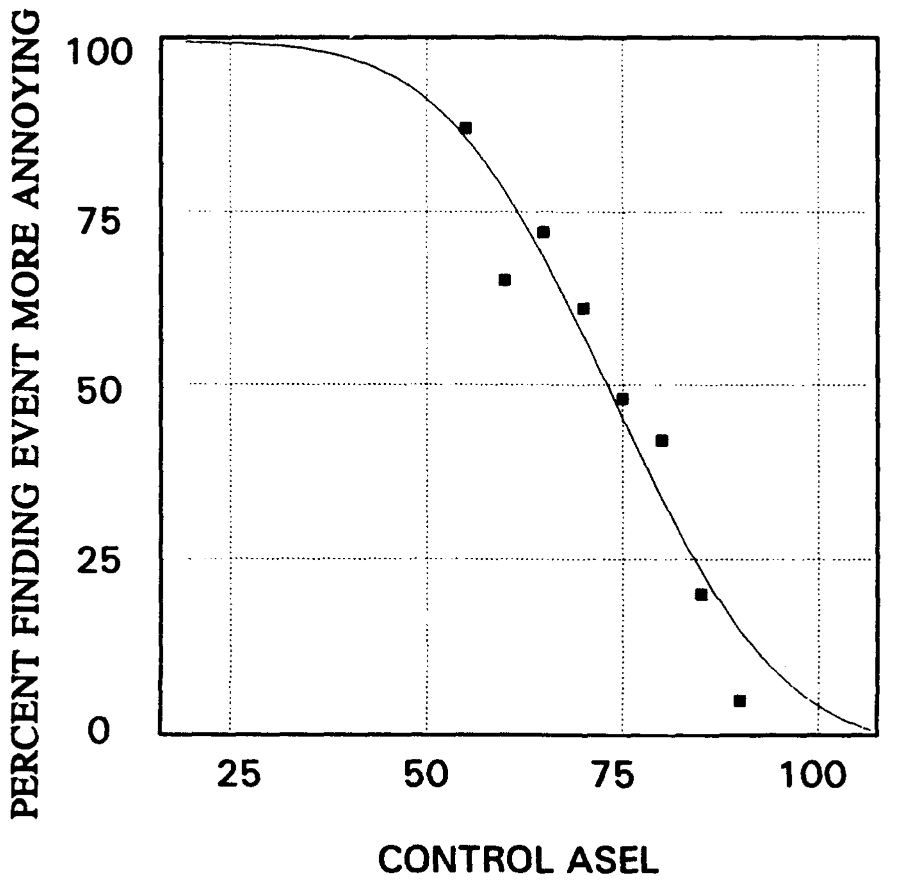


Figure A15

Test Source: Leopard II
Condition: Windows Open
Control Source: White Noise
Data Included: Sets 6-10

LEOPARD II, SECOND HALF–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.4	0.641	0.641	0.0
2	5.0	100.0	99.4	0.643	0.643	496.8
3	10.0	100.0	99.4	0.648	0.648	993.6
4	15.0	100.0	99.3	0.666	0.666	1490.3
5	55.0	87.0	85.6	1.371	1.576	5347.8
6	60.0	65.0	78.0	−13.013	−20.020	5757.8
7	65.0	72.0	68.4	3.632	5.044	6124.5
8	70.0	61.0	57.2	3.824	6.269	6438.9
9	75.0	48.0	45.3	2.722	5.670	6695.1
10	80.0	42.0	33.7	8.310	19.786	6892.2
11	85.0	20.0	23.3	−3.350	−16.749	7034.1
12	90.0	5.0	14.9	−9.897	−197.931	7128.8
13	110.0	0.0	−0.1	0.083	0.000	7234.7
14	115.0	0.0	−0.9	0.913	0.000	7231.9
15	120.0	0.0	−1.3	1.314	0.000	7226.2
16	125.0	0.0	−1.5	1.492	0.000	7219.1

X@50Y	76.8		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	5.7		
F−stat	253.6		
Confidence	90.0		
A	−1.6	C	73.5
A StdErr	3.1	C StdErr	1.5
A t	−0.5	C t	50.1
A ConfLimits	−7.2	C ConfLimits	70.9
	3.9		76.1
B	101.0	D	−16.8
B StdErr	4.3	D StdErr	2.1
B t	23.4	D t	−8.0
B ConfLimits	93.3	D ConfLimits	−20.6
	108.7		−13.1

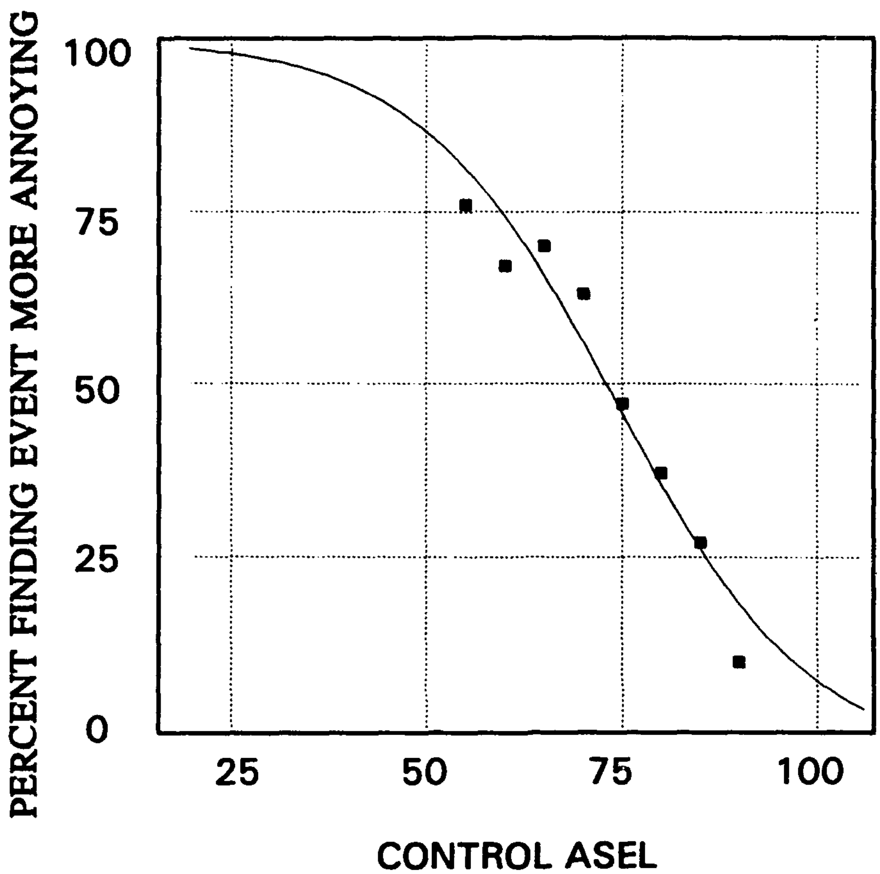


Figure A16

Test Source: Vehicle 2
Condition: Windows Open
Control Source: Vehicles
Data Included: Sets 6-10

VEHICLE 2, SECOND HALF – NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.5	0.528	0.528	0.0
2	5.0	100.0	99.3	0.661	0.661	497.0
3	10.0	100.0	99.1	0.860	0.860	993.3
4	15.0	100.0	98.8	1.155	1.155	1488.3
5	55.0	76.0	81.2	−5.182	−6.819	5235.0
6	60.0	67.0	74.3	−7.251	−10.822	5624.2
7	65.0	70.0	65.8	4.237	6.052	5974.9
8	70.0	63.0	56.0	6.971	11.066	6279.8
9	75.0	47.0	45.7	1.333	2.837	6534.1
10	80.0	37.0	35.5	1.522	4.113	6736.7
11	85.0	27.0	26.2	0.788	2.918	6890.4
12	90.0	10.0	18.4	−8.364	−83.639	7001.2
13	110.0	0.0	1.4	−1.408	0.000	7165.3
14	115.0	0.0	−0.3	0.319	0.000	7167.8
15	120.0	0.0	−1.5	1.509	0.000	7163.0
16	125.0	0.0	−2.3	2.321	0.000	7153.3
X@50Y	76.7					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.4					
F−stat	405.0					
Confidence	90.0					
A	−4.0	C	73.9			
A StdErr	3.1	C StdErr	1.4			
A t	−1.3	C t	53.1			
A ConfLimits	−9.5	C ConfLimits	71.5			
	1.5		76.4			
B	103.7	D	−12.4			
B StdErr	4.2	D StdErr	1.4			
B t	24.9	D t	−8.6			
B ConfLimits	96.3	D ConfLimits	−15.0			
	111.2		−9.9			

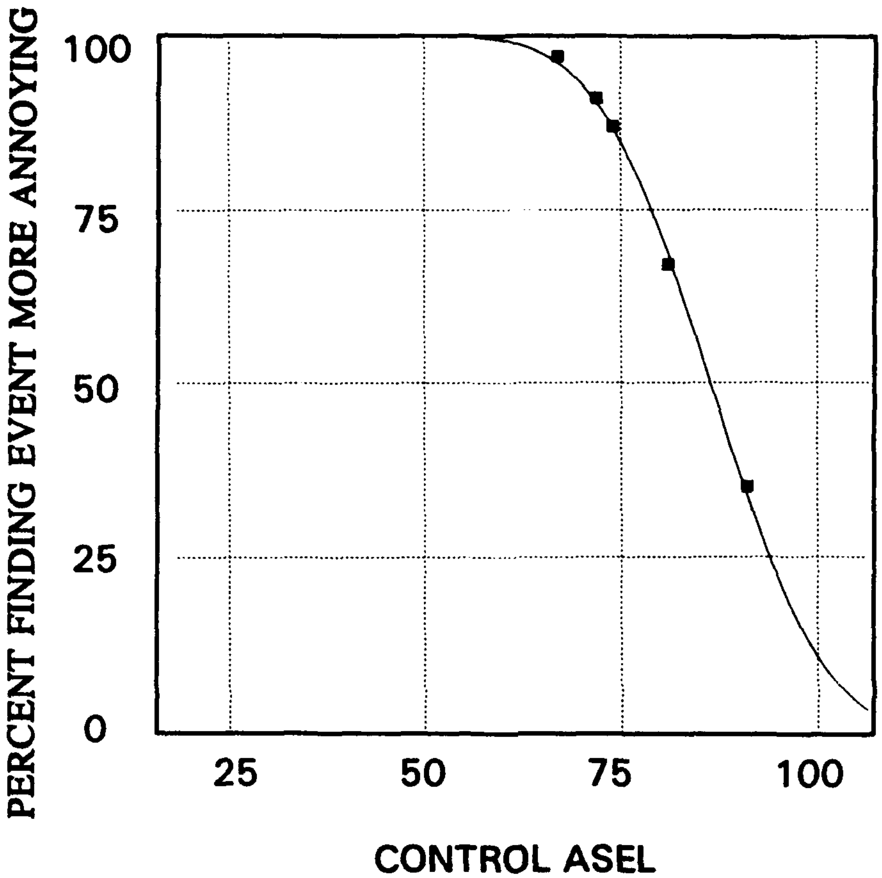


Figure A17

Test Source: Near Gun, 60
Condition: Outdoors
Control Source: Vehicles
Data Included: Sets 7-10

NEAR GUN 60, OUTDOOR–VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.220	−0.220	0.0
2	5.0	100.0	100.2	−0.220	−0.220	501.1
3	10.0	100.0	100.2	−0.220	−0.220	1002.2
4	15.0	100.0	100.2	−0.220	−0.220	1503.3
5	67.0	97.0	96.1	0.924	0.952	6696.0
6	72.0	91.0	90.3	0.691	0.760	7163.5
7	74.0	87.0	86.8	0.184	0.212	7340.8
8	81.0	67.0	68.7	−1.655	−2.470	7890.1
9	91.0	35.0	33.9	1.082	3.092	8404.0
10	110.0	0.0	1.2	−1.243	0.000	8643.7
11	115.0	0.0	0.0	−0.005	0.000	8646.3
12	120.0	0.0	−0.4	0.397	0.000	8645.1
13	125.0	0.0	−0.5	0.505	0.000	8642.8
X@50Y	86.4					
Equation	y=a+b0.5(1+erf((x−c)/(Û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	0.9					
F−stat	9908.0					
Confidence	90.0					
A	−0.5	C	86.4			
A StdErr	0.5	C StdErr	0.2			
A t	−1.1	C t	385.7			
A ConfLimits	−1.4	C ConfLimits	86.0			
	0.4		86.9			
B	100.8	D	−11.2			
B StdErr	0.7	D StdErr	0.3			
B t	148.0	D t	−38.1			
B ConfLimits	99.5	D ConfLimits	−11.7			
	102.0		−10.7			

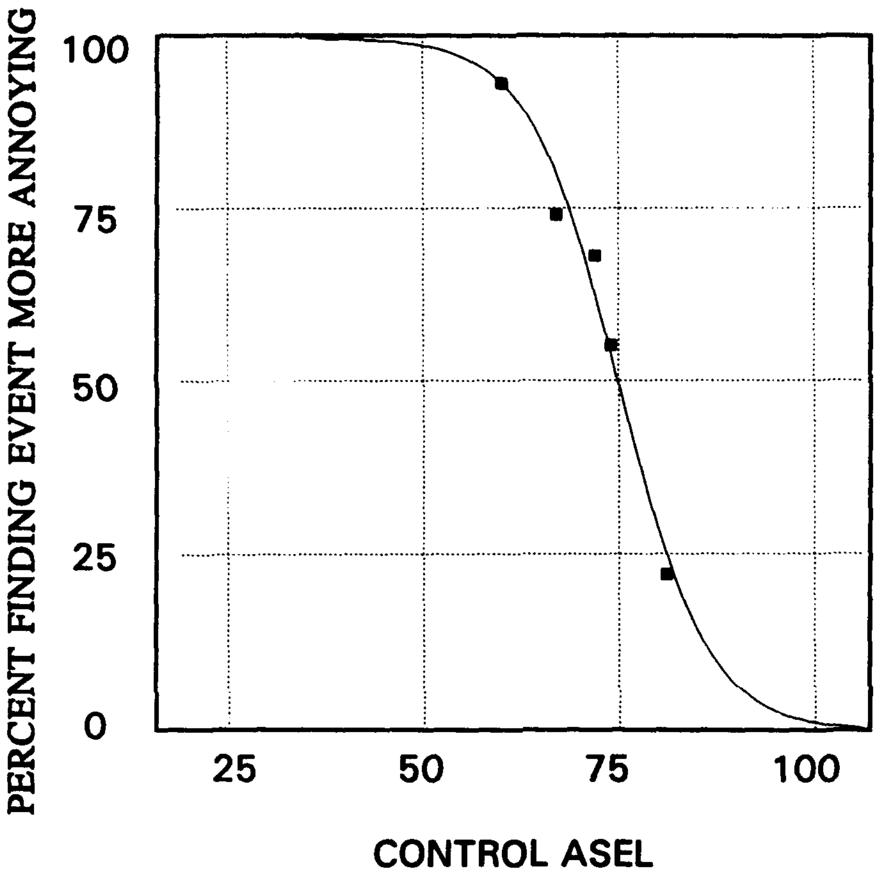


Figure A18

Test Source: Near Gun, 6
Condition: Outdoors
Control Source: Vehicles
Data Included: Sets 7-10

NEAR GUN 6, OUTDOOR–VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.6	0.421	0.421	0.0
2	5.0	100.0	99.6	0.421	0.421	497.9
3	10.0	100.0	99.6	0.421	0.421	995.8
4	15.0	100.0	99.6	0.423	0.423	1493.7
5	60.0	93.0	93.1	−0.051	−0.055	5936.8
6	67.0	74.0	80.1	−6.072	−8.206	6549.7
7	72.0	68.0	62.5	5.498	8.085	6909.0
8	74.0	55.0	53.9	1.091	1.983	7025.5
9	81.0	22.0	25.1	−3.143	−14.288	7297.8
10	110.0	0.0	−0.1	0.133	0.000	7452.6
11	115.0	0.0	−0.2	0.248	0.000	7451.6
12	120.0	0.0	−0.3	0.296	0.000	7450.2
13	125.0	0.0	−0.3	0.316	0.000	7448.7
X@50Y	74.9					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.0					
F−stat	878.8					
Confidence	90.0					
A	−0.3	C	75.0			
A StdErr	1.5	C StdErr	0.5			
A t	−0.2	C t	152.2			
A ConfLimits	−3.1	C ConfLimits	74.1			
	2.4		75.9			
B	99.9	D	−5.6			
B StdErr	2.1	D StdErr	0.5			
B t	47.7	D t	−10.9			
B ConfLimits	96.1	D ConfLimits	−6.6			
	103.8		−4.7			

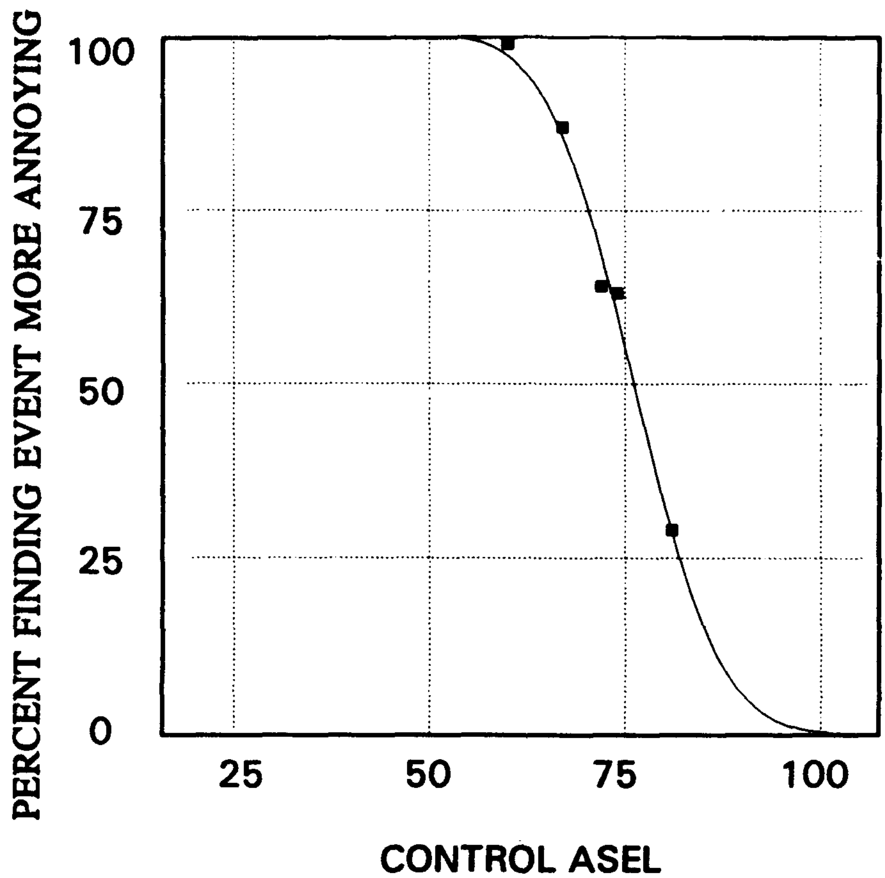


Figure A19

Test Source: Far Gun, 60
Condition: Outdoors
Control Source: Vehicles
Data Included: Sets 7-10

FAR GUN 60, OUTDOOR–VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.368	−0.368	0.0
2	5.0	100.0	100.4	−0.368	−0.368	501.8
3	10.0	100.0	100.4	−0.368	−0.368	1003.7
4	15.0	100.0	100.4	−0.368	−0.368	1505.5
5	60.0	99.0	97.2	1.756	1.774	6011.6
6	67.0	87.0	85.8	1.243	1.429	6659.6
7	72.0	64.0	68.6	−4.615	−7.211	7048.7
8	74.0	63.0	60.0	3.033	4.814	7177.4
9	81.0	29.0	28.8	0.180	0.622	7485.9
10	110.0	0.0	0.0	−0.035	0.000	7642.4
11	115.0	0.0	0.0	−0.030	0.000	7642.5
12	120.0	0.0	0.0	−0.030	0.000	7642.7
13	125.0	0.0	0.0	−0.030	0.000	7642.8

X@50Y	76.2		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	2.0		
F−stat	2007.3		
Confidence	90.0		
A	0.0	C	76.1
A StdErr	1.0	C StdErr	0.3
A t	0.0	C t	236.4
A ConfLimits	−1.8	C ConfLimits	75.5
	1.9		76.7
B	100.3	D	−8.7
B StdErr	1.4	D StdErr	0.5
B t	72.7	D t	−16.8
B ConfLimits	97.8	D ConfLimits	−9.6
	102.9		−7.7

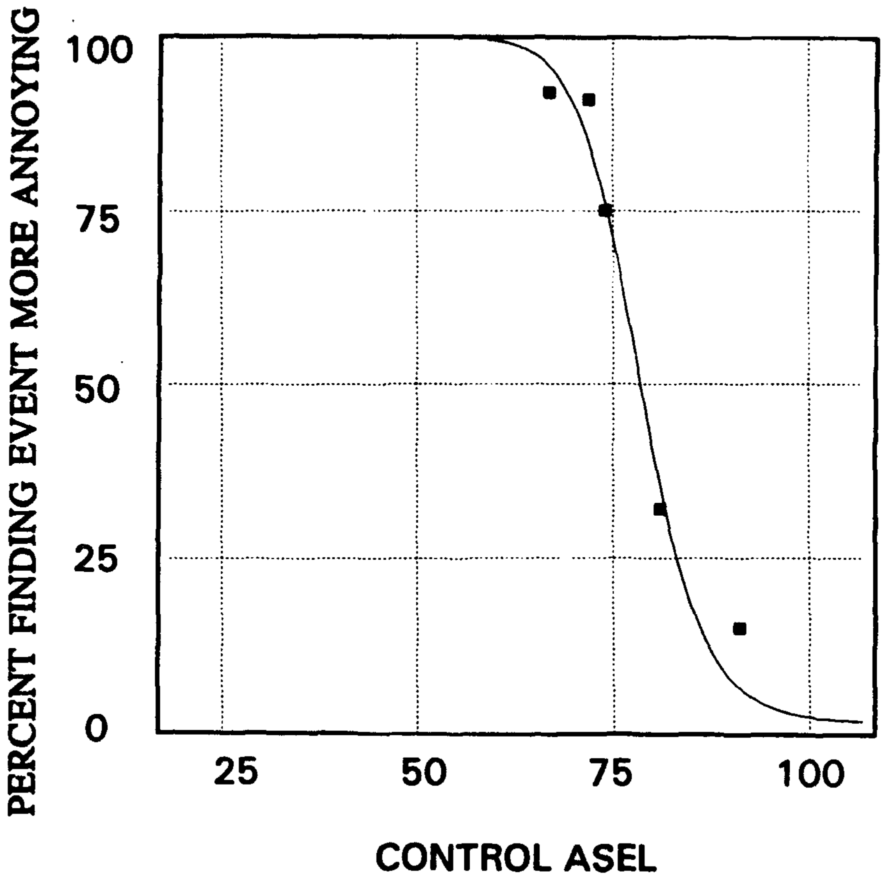


Figure A20

Test Source: Leopard II
Condition: Outdoors
Control Source: Vehicles
Data Included: Sets 7-10

LEOPARD II, OUTDOOR–VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.034	0.034	0.0
2	5.0	100.0	100.0	0.034	0.034	499.8
3	10.0	100.0	100.0	0.034	0.034	999.7
4	15.0	100.0	100.0	0.034	0.034	1499.5
5	67.0	92.0	95.8	−3.773	−4.101	6683.9
6	72.0	91.0	84.7	6.332	6.958	7139.9
7	74.0	75.0	76.3	−1.334	−1.779	7301.3
8	81.0	32.0	35.7	−3.709	−11.591	7696.3
9	91.0	15.0	6.5	8.504	56.690	7869.1
10	110.0	0.0	1.6	−1.612	0.000	7921.6
11	115.0	0.0	1.5	−1.539	0.000	7929.5
12	120.0	0.0	1.5	−1.509	0.000	7936.9
13	125.0	0.0	1.5	−1.497	0.000	7944.7
X@50Y	78.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.1					
F–stat	499.1					
Confidence	90.0					
A	1.5	C	78.5			
A StdErr	2.0	C StdErr	0.6			
A t	0.8	C t	127.1			
A ConfLimits	−2.1	C ConfLimits	77.3			
	5.1		79.6			
B	98.5	D	19.7			
B StdErr	2.8	D StdErr	2.5			
B t	34.7	D t	8.0			
B ConfLimits	93.3	D ConfLimits	15.2			
	103.7		24.2			

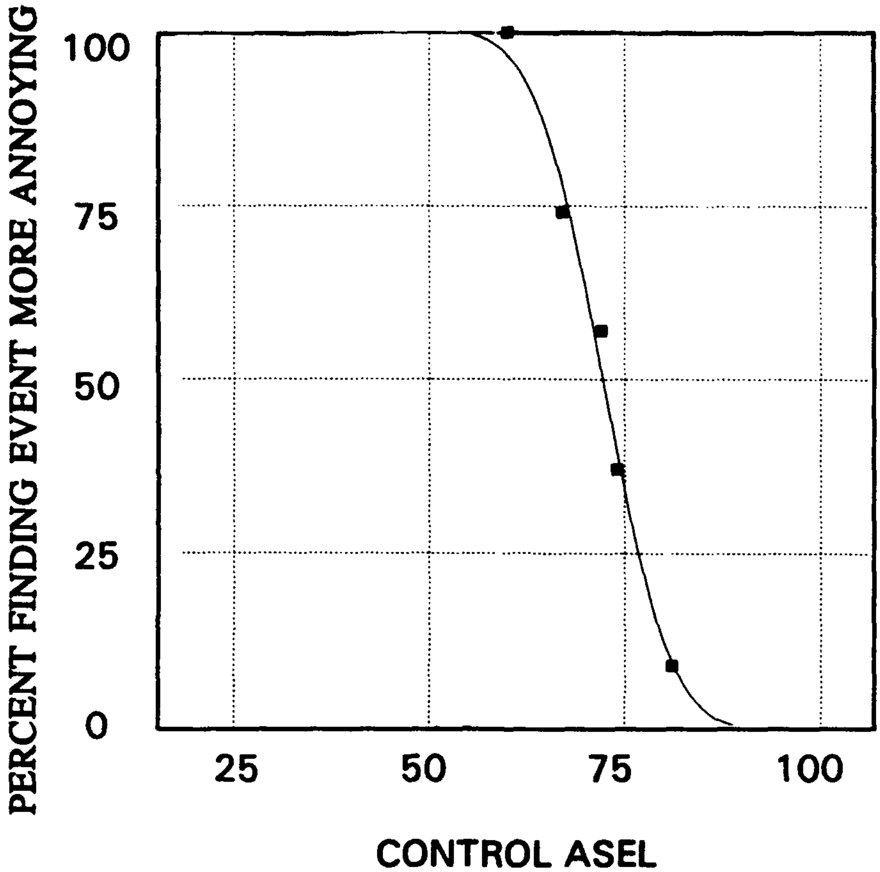


Figure A21

Test Source: Marder
Condition: Outdoors
Control Source: Vehicles
Data Included: Sets 7-10

MARDER, OUTDOOR–VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.363	−0.363	0.0
2	5.0	100.0	100.4	−0.363	−0.363	501.8
3	10.0	100.0	100.4	−0.363	−0.363	1003.6
4	15.0	100.0	100.4	−0.363	−0.363	1505.4
5	60.0	100.0	96.8	3.213	3.213	6012.2
6	67.0	74.0	78.2	−4.240	−5.730	6638.3
7	72.0	57.0	51.5	5.515	9.675	6965.8
8	74.0	37.0	39.8	−2.776	−7.503	7057.0
9	81.0	9.0	9.7	−0.719	−7.991	7216.8
10	110.0	0.0	−0.1	0.115	0.000	7244.9
11	115.0	0.0	−0.1	0.115	0.000	7244.3
12	120.0	0.0	−0.1	0.115	0.000	7243.8
13	125.0	0.0	−0.1	0.115	0.000	7243.2
X@50Y	72.2					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.7					
F−stat	1104.2					
Confidence	90.0					
A	−0.1	C	72.2			
A StdErr	1.3	C StdErr	0.3			
A t	−0.1	C t	212.3			
A ConfLimits	−2.6	C ConfLimits	71.6			
	2.4		72.9			
B	100.5	D	−6.8			
B StdErr	1.9	D StdErr	0.6			
B t	52.7	D t	−12.2			
B ConfLimits	97.0	D ConfLimits	−7.8			
	104.0		−5.8			

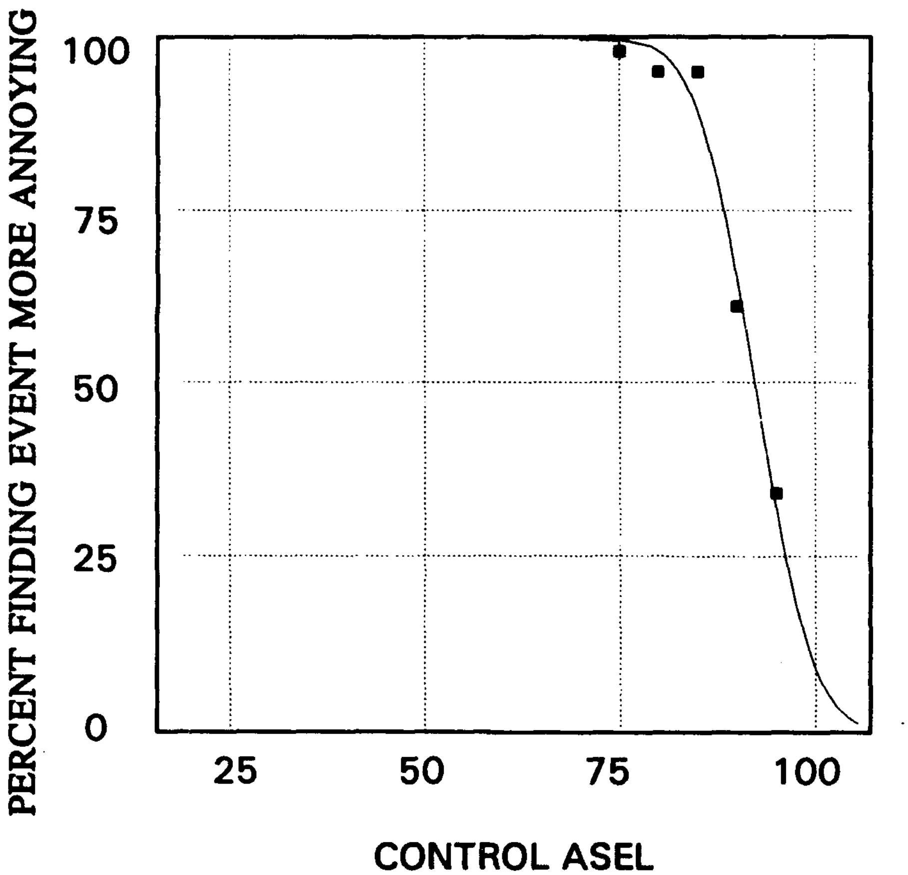


Figure A22

Test Source: Near Gun, 60
Condition: Outdoors
Control Source: White Noise
Data Included: Sets 7-10

NEAR GUN 60, SECOND HALF–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.6	0.398	0.398	0.0
2	5.0	100.0	99.6	0.398	0.398	498.0
3	10.0	100.0	99.6	0.398	0.398	996.0
4	15.0	100.0	99.6	0.398	0.398	1494.0
5	75.0	98.0	99.5	−1.470	−1.500	7469.9
6	80.0	95.0	98.0	−2.981	−3.137	7964.8
7	85.0	95.0	89.4	5.570	5.863	8438.3
8	90.0	61.0	65.3	−4.344	−7.122	8832.3
9	95.0	34.0	31.9	2.053	6.038	9075.1
10	110.0	0.0	0.2	−0.183	0.000	9195.4
11	115.0	0.0	0.1	−0.081	0.000	9196.0
12	120.0	0.0	0.1	−0.077	0.000	9196.4
13	125.0	0.0	0.1	−0.077	0.000	9196.8
X@50Y	92.3					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.7					
F−stat	1152.9					
Confidence	90.0					
A	0.1	C	92.3			
A StdErr	1.4	C StdErr	0.3			
A t	0.1	C t	278.8			
A ConfLimits	−2.4	C ConfLimits	91.7			
	2.6		92.9			
B	99.5	D	−5.8			
B StdErr	1.8	D StdErr	0.5			
B t	55.5	D t	−11.0			
B ConfLimits	96.2	D ConfLimits	−6.7			
	102.8		−4.8			

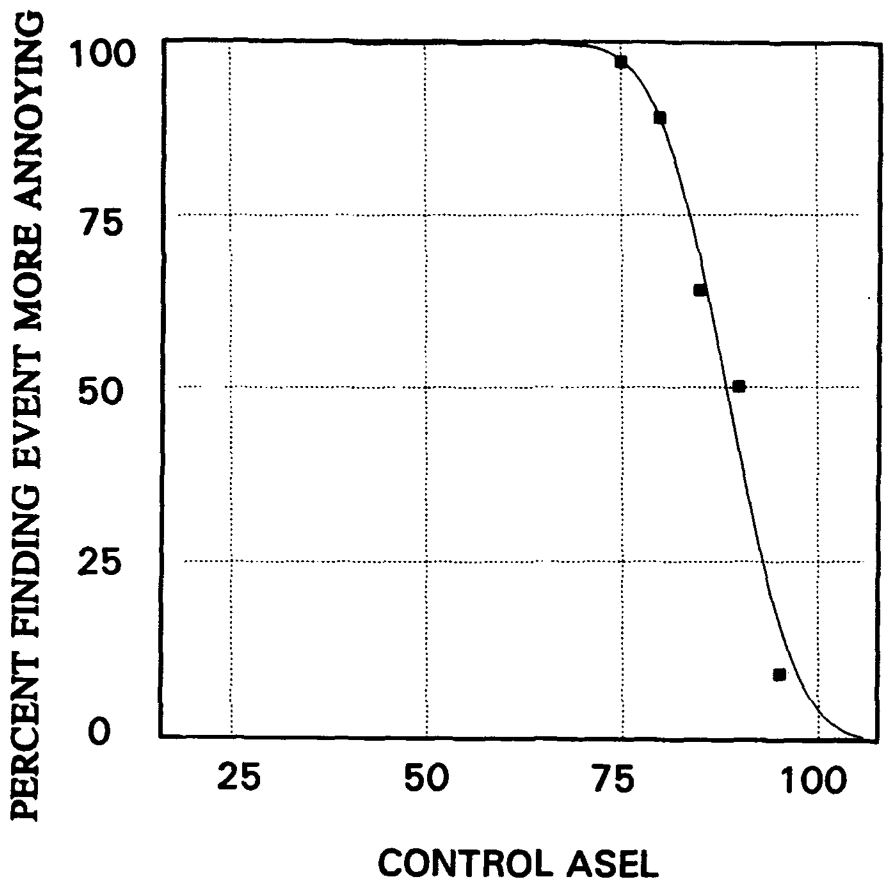


Figure A23

Test Source: Leopard II
Condition: Outdoors
Control Source: White Noise
Data Included: Sets 7-10

LEOPARD II, SECOND HALF–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.7	0.305	0.305	0.0
2	5.0	100.0	99.7	0.305	0.305	498.5
3	10.0	100.0	99.7	0.305	0.305	996.9
4	15.0	100.0	99.7	0.305	0.305	1495.4
5	75.0	97.0	97.3	–0.301	–0.310	7471.0
6	80.0	89.0	89.0	–0.002	–0.002	7940.7
7	85.0	64.0	69.1	–5.098	–7.965	8341.2
8	90.0	50.0	40.6	9.373	18.745	8616.7
9	95.0	9.0	16.3	–7.328	–81.423	8754.8
10	110.0	0.0	–0.5	0.477	0.000	8807.5
11	115.0	0.0	–0.5	0.550	0.000	8804.9
12	120.0	0.0	–0.6	0.554	0.000	8802.1
13	125.0	0.0	–0.6	0.554	0.000	8799.3
X@50Y	88.4					
Equation	y=a+b0.5(1+erf((x–c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.3					
F–stat	446.4					
Confidence	90.0					
A	99.7	C	88.5			
A StdErr	2.0	C StdErr	0.6			
A t	49.1	C t	152.5			
A ConfLimits	96.0	C ConfLimits	87.4			
	103.4		89.5			
B	–100.2	D	6.8			
B StdErr	3.0	D StdErr	0.8			
B t	–33.3	D t	8.4			
B ConfLimits	–105.8	D ConfLimits	5.3			
	–94.7		8.3			

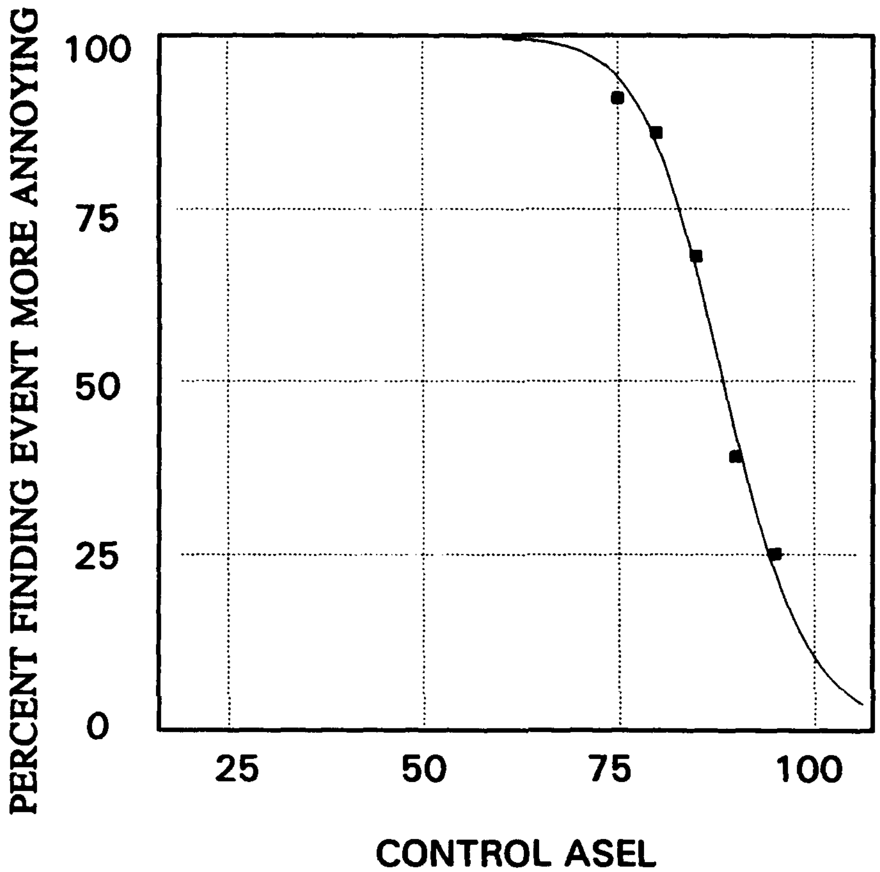


Figure A24

Test Source: Vehicle 2
Condition: Outdoors
Control Source: Vehicles
Data Included: Sets 7-10

VEHICLE 2, OUTDOOR GROUP–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.7	0.315	0.315	0.0
2	5.0	100.0	99.7	0.315	0.315	498.4
3	10.0	100.0	99.7	0.315	0.315	996.9
4	15.0	100.0	99.7	0.315	0.315	1495.3
5	75.0	91.0	94.0	−3.008	−3.306	7452.0
6	80.0	86.0	84.4	1.563	1.818	7901.3
7	85.0	68.0	66.2	1.824	2.682	8281.5
8	90.0	39.0	42.5	−3.503	−8.982	8553.6
9	95.0	25.0	22.5	2.507	10.029	8713.0
10	110.0	0.0	1.5	−1.511	0.000	8840.8
11	115.0	0.0	0.2	−0.211	0.000	8844.7
12	120.0	0.0	−0.4	0.395	0.000	8844.0
13	125.0	0.0	−0.7	0.684	0.000	8841.3
X@50Y	88.4					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.0					
F–stat	1939.5					
Confidence	90.0					
A	−1.0	C	88.6			
A StdErr	1.1	C StdErr	0.3			
A t	−0.9	C t	269.0			
A ConfLimits	−3.1	C ConfLimits	88.0			
	1.1		89.2			
B	100.7	D	17.0			
B StdErr	1.6	D StdErr	1.0			
B t	64.6	D t	16.7			
B ConfLimits	97.8	D ConfLimits	15.1			
	103.5		18.8			

Appendix B: Indoor and Outdoor Measured Acoustical Data for Small Arms and Tracked and Wheeled Vehicles, and Outdoor Acoustical Data for Blast Sounds

Munster, Germany
Noise Data
July 1991

Test #01.1

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 8 CSEL	CPK
	BT	101	98	103	100	79	79	81	82	83	86	89	90
	FGF	78	85	96	89	66	81	67	88	68	86	77	76
	HB	97	114	104	121	70	94	63	92	66	89	91	106
	LB	89	108	97	112	66	89	57	79	61	86	84	98
	NGF	81	94	96	94	75	94	78	93	79	95	77	75
	NGS	76	91	94	93	66	90	69	91	70	91	73	74
	ST	95	93	99	95	72	77	73	78	76	84	83	84
	V1	100	104	102	105	93	99	92	100	96	101	84	83
	V2	97	103	100	104	87	101	86	97	90	99	83	85
	V3	89	93	97	96	83	89	79	88	84	89	79	78
	V4	95	99	100	102	78	87	75	85	80	87	84	86
	V5	84	88	97	92	72	81	69	79	73	86	78	79
	V6	84	86	97	91	65	77	63	77	66	80	79	78

Run No.	Event	MIC 1 ASEL	MIC 2 ASEL	MIC 3 ASEL	MIC 4 ASEL	MIC 5 ASEL	MIC 6 ASEL	MIC 7 ASEL	MIC 8 ASEL	ODDS	EVENS
	BT	60	64	65	67	65	63	63	63	63	64
	FGF	46	61	49	59	43	60	47	60	46	60
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	50	60	51	60	47	59	48	59	49	60
	NGS	43	58	44	55	41	56	43	57	43	57
	ST	53	62	59	61	58	61	56	61	56	61
	V1	64	65	65	65	63	64	63	64	64	65
	V2	59	63	61	63	61	62	58	61	60	62
	V3	53	61	54	60	53	60	52	60	53	60
	V4	54	61	57	60	55	61	54	61	55	61
	V5	47	60	51	59	47	60	48	60	48	60
	V6	46	60	50	59	45	60	48	59	47	60

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #01.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 8 FSEL	FPK
	BT	100	98	102	100	79	78	81	82	83	84	89	89
	FGF	78	84	96	88	66	83	66	86	68	83	80	83
	HB	97	113	104	120	70	95	62	92	65	87	94	107
	LB	89	108	96	112	65	89	56	76	60	78	85	99
	NGF	82	98	96	97	76	97	78	97	80	97	79	77
	NGS	75	91	92	91	66	91	68	91	70	90	73	75
	ST	95	92	99	94	71	75	74	79	76	82	83	83
	V1	100	105	102	105	92	99	92	100	95	101	82	81
	V2	97	103	100	104	87	99	86	96	89	98	84	88
	V3	89	93	96	95	83	90	79	87	84	89	79	78
	V4	95	99	99	102	78	88	76	85	80	87	85	86
	V5	84	88	96	92	72	81	69	78	73	81	80	81
	V6	84	85	96	91	65	72	63	75	66	76	78	78

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	60	62	64	65	65	62	63	58	63	62
	FGF	46	40	50	48	46	43	47	42	47	43
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	50	50	53	51	49	49	49	47	50	49
	NGS	43	40	44	41	40	40	43	38	43	40
	ST	53	53	58	55	57	55	57	52	56	54
	V1	64	63	64	64	63	62	63	62	63	63
	V2	59	59	61	61	62	59	58	57	60	59
	V3	54	54	54	54	53	51	52	51	53	52
	V4	54	53	57	57	56	54	55	53	55	54
	V5	47	46	49	48	47	45	48	46	48	46
	V6	47	43	50	47	48	46	47	43	48	45

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #02.1
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 8 FSEL	FPK
	BT	100	98	103	100	79	80	80	78	82	82	88	89
	FGF	79	85	99	90	67	82	70	88	70	85	81	82
	HB	97	116	104	121	70	94	61	77	69	92	92	106
	LB	92	112	98	115	66	90	58	75	65	86	86	99
	NGF	81	92	99	94	77	97	74	87	78	92	78	77
	NGS	77	90	95	92	68	96	65	86	69	89	74	76
	ST	96	95	101	97	75	76	75	78	78	80	84	83
	V1	102	105	104	106	95	102	94	101	97	103	87	87
	V2	94	99	100	100	87	94	84	94	89	96	80	81
	V3	94	98	101	102	79	87	76	86	81	87	86	89
	V4	94	93	100	96	77	84	74	81	79	83	79	80
	V5	85	90	99	93	73	80	70	78	74	80	78	80
	V6	83	85	99	91	62	74	62	79	63	79	79	79

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	60	60	66	65	63	61	60	58	62	61
	FGF	46	44	47	43	44	43	46	42	46	43
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	48	47	50	49	48	48	49	46	49	48
	NGS	42	40	45	42	44	44	44	41	44	42
	ST	56	57	62	59	60	58	59	53	59	57
	V1	66	65	67	66	65	64	66	64	66	65
	V2	58	58	59	58	57	57	57	54	58	57
	V3	53	52	58	55	55	54	55	53	55	54
	V4	50	50	51	51	51	51	51	48	51	50
	V5	48	47	49	48	47	46	48	44	48	46
	V6	45	41	47	43	43	42	46	41	45	42

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #02.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 8 FSEL	FPK
	BT	100	98	103	100	79	80	80	79	82	82	88	88
	FGF	79	84	98	89	66	78	67	83	68	80	78	83
	HB	94	112	101	118	65	91	56	77	63	85	91	104
	LB	91	111	98	114	63	84	55	78	61	82	85	99
	NGF	81	91	98	92	76	96	74	86	77	91	77	78
	NGS	75	91	94	92	67	94	65	84	68	88	74	74
	ST	96	94	101	96	74	75	75	77	78	79	83	83
	V1	102	105	104	106	95	103	94	102	98	104	87	89
	V2	94	99	100	100	86	94	84	94	89	97	81	82
	V3	94	97	100	102	79	87	77	86	81	87	84	85
	V4	96	95	101	97	76	83	74	82	78	82	80	81
	V5	84	88	98	92	72	81	69	79	73	80	78	80
	V6	84	85	98	93	62	72	60	76	63	78	80	85

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	59	60	66	65	63	62	61	58	62	61
	FGF	45	42	47	42	43	46	46	41	45	43
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	48	47	50	48	48	50	48	45	49	47
	NGS	42	40	44	40	41	41	43	40	43	40
	ST	56	57	62	59	60	58	59	53	59	57
	V1	66	66	67	66	65	64	65	64	66	65
	V2	58	58	60	58	57	57	57	55	58	57
	V3	53	53	58	55	55	54	55	53	55	54
	V4	53	52	57	54	55	55	55	49	55	53
	V5	47	47	49	48	50	53	48	44	49	48
	V6	46	43	48	43	45	45	47	42	47	43

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #03.1
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 8 FSEL	FPK
	BT	101	99	103	100	79	78	81	83	83	85	89	85
	FGF	80	91	99	96	70	88	70	83	75	93	86	78
	HB	97	118	102	121	73	98	66	88	74	100	88	102
	LB	89	108	96	112	67	93	60	78	68	92	83	94
	NGF	84	99	99	98	78	96	80	96	82	98	86	78
	NGS	78	98	94	97	70	95	72	94	74	97	81	78
	ST	95	92	101	95	72	75	74	79	76	84	87	81
	V1	102	105	104	106	95	102	94	103	98	102	88	86
	V2	94	100	101	102	86	94	84	94	90	97	88	82
	V3	94	97	101	101	78	88	76	86	81	89	87	84
	V4	95	93	100	96	75	81	72	80	77	84	86	81
	V5	84	88	99	93	72	80	68	79	73	85	86	78
	V6	82	84	98	90	61	74	58	78	62	83	85	78

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	60	62	61	65	64	61	64	60	62	62
	FGF	47	44	48	46	44	45	47	44	47	45
	HB	53	52	54	51	55	52	49	53	53	52
	LB	46	44	46	43	47	44	42	43	45	44
	NGF	52	51	52	52	50	50	50	48	51	50
	NGS	46	45	45	44	43	43	43	41	44	43
	ST	53	54	59	55	58	56	57	53	57	55
	V1	65	65	67	65	65	64	65	64	65	65
	V2	57	57	58	58	57	57	57	55	57	57
	V3	53	52	56	55	54	54	55	53	55	53
	V4	51	50	55	53	54	54	53	48	53	51
	V5	47	46	48	48	46	45	47	44	47	46
	V6	44	40	45	41	42	41	45	40	44	41

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #03.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	101	99	103	100	79	78	81	83	83	84	89	88
	FGF	81	91	99	94	69	86	70	82	74	93	86	78
	HB	94	113	101	117	68	91	61	78	68	89	87	100
	LB	89	108	96	112	65	87	58	77	66	87	82	93
	NGF	84	97	99	96	78	97	81	94	82	96	86	80
	NGS	78	95	94	94	70	93	72	94	74	94	81	78
	ST	95	92	100	96	71	74	75	79	77	79	86	81
	V1	102	105	104	106	95	102	94	102	97	102	88	85
	V2	94	99	100	100	86	94	83	94	89	97	87	82
	V3	94	98	101	101	78	87	76	84	80	87	87	86
	V4	96	94	101	97	76	82	73	81	78	84	87	81
	V5	84	88	99	93	72	80	69	80	73	83	86	78
	V6	84	85	99	91	64	74	60	77	65	81	86	80

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	60	62	62	64	64	61	64	60	62	62
	FGF	46	43	49	47	45	45	47	43	47	45
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	52	51	52	51	50	51	50	49	51	51
	NGS	45	43	45	43	43	44	44	42	44	43
	ST	53	54	60	56	58	56	57	53	57	55
	V1	65	65	67	65	64	64	65	64	65	65
	V2	57	57	58	57	56	56	56	55	57	56
	V3	53	52	55	54	55	54	54	53	54	53
	V4	51	51	54	53	51	52	53	49	53	51
	V5	47	46	49	48	49	47	47	45	48	47
	V6	46	42	48	46	44	43	46	42	46	43

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #04.1
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	101	99	103	100	78	79	79	79	82	82	88	86
	FGF	78	89	96	91	70	89	70	81	74	90	85	77
	HB	100	118	107	124	75	100	69	93	73	93	95	109
	LB	93	113	99	116	71	94	63	89	66	87	89	102
	NGF	83	96	97	95	77	95	79	93	81	95	86	76
	NGS	77	91	92	92	66	92	68	90	70	91	81	76
	ST	96	94	100	95	74	74	74	75	78	79	87	82
	V1	102	106	104	107	95	102	94	102	97	102	88	85
	V2	94	99	99	100	86	93	84	94	89	96	87	81
	V3	95	98	100	102	78	87	76	85	80	86	87	85
	V4	96	94	100	96	76	82	73	81	77	81	86	81
	V5	85	88	97	92	72	82	69	78	73	82	86	78
	V6	83	83	96	89	62	69	61	70	64	73	85	77

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	59	61	60	59	62	60	61	58	60	59
	FGF	46	44	48	46	45	45	48	46	47	45
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	51	49	51	50	49	49	50	48	50	49
	NGS	43	40	42	40	41	42	43	42	42	41
	ST	55	57	56	58	60	57	58	53	58	56
	V1	66	65	67	66	64	64	66	63	66	65
	V2	57	57	57	57	56	57	56	54	57	56
	V3	53	52	55	55	55	55	55	52	54	53
	V4	53	52	54	54	53	53	54	48	53	52
	V5	48	47	48	48	48	46	50	47	48	47
	V6	45	41	45	41	43	44	46	42	45	42

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #04.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 8 FSEL	FPK
	BT	100	98	103	100	79	80	80	79	82	82	89	88
	FGF	79	92	97	93	70	88	71	84	74	92	86	77
	HB	101	119	108	124	76	102	70	93	73	94	96	110
	LB	94	114	99	117	72	97	65	84	68	89	89	102
	NGF	83	97	97	96	79	96	81	95	82	96	86	77
	NGS	76	92	92	91	68	90	71	89	72	91	81	76
	ST	95	93	99	95	73	74	74	75	77	79	87	82
	V1	102	106	104	[illegible]	95	101	94	101	97	102	88	86
	V2	94	99	99	100	86	93	83	94	89	96	87	82
	V3	95	99	100	103	78	88	76	85	81	87	88	88
	V4	96	94	100	96	75	82	73	79	77	81	87	81
	V5	84	88	97	92	72	82	69	78	73	81	86	79
	V6	82	82	96	88	62	65	60	68	63	72	85	77

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	60	62	60	64	63	61	63	59	61	61
	FGF	48	44	48	46	45	45	48	45	47	45
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	53	51	52	51	51	50	50	49	51	50
	NGS	45	42	44	42	43	43	43	40	44	42
	ST	55	56	57	58	59	56	58	53	57	56
	V1	66	65	66	65	64	64	65	63	65	64
	V2	57	57	57	57	56	57	56	54	57	56
	V3	54	53	56	55	59	59	56	52	56	55
	V4	55	52	57	57	56	58	55	49	56	54
	V5	49	48	49	49	48	47	48	45	49	47
	V6	45	41	46	43	44	45	46	42	45	43

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #05.1
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	MIC 10 CPK	MIC 10 FSEL	MIC 10 FPK	MIC 9 ASEL	MIC 9 APK	MIC 11 ASEL	MIC 11 APK	MIC 10 ASEL	MIC 10 APK	MIC 2 FSEL	MIC 2 FPK
	BT	101	99	102	100	79	78	81	82	83	83	89	87
	FGF	79	84	97	88	66	83	69	84	69	83	86	78
	HB	98	118	104	122	75	99	69	93	71	92	92	106
	LB	93	113	98	116	71	96	65	82	68	90	88	101
	NGF	84	99	97	98	79	97	82	95	83	98	86	77
	NGS	77	94	92	93	70	98	72	92	72	93	81	76
	ST	96	93	100	96	72	73	74	76	77	79	87	81
	V1	102	105	104	106	95	102	94	102	98	103	88	86
	V2	94	99	99	100	86	94	84	94	89	97	87	82
	V3	95	99	100	104	78	88	76	85	81	88	88	87
	V4	96	95	100	97	76	82	73	79	78	82	87	81
	V5	84	88	97	92	72	80	69	78	73	80	86	79
	V6	83	84	96	90	61	70	59	73	62	76	85	78

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	60	62	59	64	64	61	63	58	62	61
	FGF	46	42	46	41	42	42	47	42	45	42
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	53	52	52	52	51	50	51	49	52	51
	NGS	44	44	43	41	41	41	42	40	43	41
	ST	53	54	58	56	58	56	57	53	57	55
	V1	65	65	66	65	64	64	66	63	65	64
	V2	57	57	57	57	56	57	56	55	57	56
	V3	54	53	56	55	55	55	55	52	55	54
	V4	52	51	54	53	55	56	53	48	53	52
	V5	48	46	47	47	46	44	47	43	47	45
	V6	45	41	46	41	42	43	45	43	45	42

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #05.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	101	100	103	101	81	80	82	84	84	85	89	87
	FGF	80	85	98	89	68	85	70	87	70	84	86	77
	HB	101	119	108	124	75	100	70	92	73	94	95	108
	LB	95	115	100	118	72	97	61	78	67	86	89	103
	NGF	85	99	98	98	81	99	83	97	84	98	89	76
	NGS	77	96	93	96	70	96	72	95	73	95	81	77
	ST	96	93	100	96	73	74	75	78	77	79	88	82
	V1	102	106	104	107	95	102	94	101	98	102	89	86
	V2	95	99	100	100	86	94	84	95	89	97	87	82
	V3	95	99	101	104	78	87	76	85	81	87	89	87
	V4	96	94	100	97	76	82	73	80	78	82	87	82
	V5	84	88	98	92	72	81	69	79	73	80	86	79
	V6	82	85	97	90	62	69	61	71	64	72	85	78

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	61	63	61	65	65	61	64	58	62	62
	FGF	47	46	46	42	43	43	46	42	46	43
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	54	53	54	53	53	52	52	50	53	52
	NGS	44	42	44	42	43	43	45	41	44	42
	ST	53	55	59	56	58	56	57	52	57	55
	V1	65	65	66	65	65	65	66	63	66	65
	V2	57	57	58	58	57	57	58	57	57	57
	V3	54	53	56	55	55	55	55	52	55	54
	V4	52	51	56	54	55	55	55	51	54	53
	V5	48	47	49	49	47	47	48	44	48	47
	V6	46	42	46	42	43	44	46	41	45	42

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #06.1
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	102	101	103	102	79	80	81	84	83	83	91	90
	FGF	78	87	94	88	67	83	70	85	70	83	85	77
	HB	88	105	98	113	64	86	58	85	62	80	101	114
	LB	81	99	92	105	60	78	56	84	59	81	93	106
	NGF	84	99	94	98	79	98	82	97	83	98	85	79
	NGS	78	94	94	94	68	94	71	93	72	94	85	77
	ST	95	94	98	94	73	76	74	83	77	80	87	85
	V1	101	105	103	106	94	101	94	101	97	102	89	90
	V2	94	99	97	99	86	94	83	92	89	96	86	85
	V3	94	98	98	101	78	87	76	85	80	86	90	92
	V4	94	95	98	96	76	83	73	85	78	83	86	84
	V5	84	88	94	91	72	80	69	84	73	81	85	81
	V6	82	88	95	91	64	81	63	86	66	85	85	80

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	65	67	66	68	68	68	70	63	67	66
	FGF	48	46	50	49	49	49	48	46	49	48
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	60	59	61	62	60	60	58	56	60	59
	NGS	51	49	52	51	50	50	50	48	51	50
	ST	61	64	62	66	67	64	66	60	64	63
	V1	73	72	74	74	74	74	72	71	73	73
	V2	64	64	65	66	65	65	64	62	65	64
	V3	60	59	64	63	62	62	61	58	62	60
	V4	56	57	58	58	57	59	57	54	57	57
	V5	52	53	53	55	54	52	52	51	53	53
	V6	48	46	49	47	47	47	50	45	48	46

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data
July 1991

Test #06.2

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	103	101	104	101	80	81	81	83	84	83	91	90
	FGF	79	86	93	89	68	85	70	89	71	86	85	80
	HB	90	107	99	114	66	89	59	87	62	79	103	115
	LB	81	98	91	104	59	76	55	81	58	80	92	105
	NGF	84	98	93	98	80	99	82	97	83	97	85	80
	NGS	78	93	93	93	69	93	71	94	72	92	85	79
	ST	95	94	98	94	73	75	74	81	77	80	88	85
	V1	101	105	103	106	94	101	93	101	97	102	90	90
	V2	94	98	97	99	86	93	83	93	89	96	87	85
	V3	95	99	98	102	78	87	77	86	81	87	91	92
	V4	95	94	97	96	76	82	73	83	78	82	86	84
	V5	84	87	93	90	72	81	69	81	73	81	85	82
	V6	84	85	93	89	63	72	62	80	65	77	85	81

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	66	68	68	68	68	68	72	65	68	67
	FGF	51	49	52	52	50	50	50	48	51	50
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	61	60	62	62	60	60	59	58	61	60
	NGS	53	51	52	52	50	50	51	51	52	51
	ST	62	65	62	66	64	63	66	61	64	64
	V1	73	72	74	74	72	72	72	71	73	72
	V2	65	65	66	67	64	64	65	63	65	65
	V3	61	60	63	62	62	62	63	59	62	61
	V4	57	58	59	59	57	59	58	55	58	58
	V5	53	54	53	56	53	52	53	52	53	53
	V6	49	48	52	51	49	49	52	48	50	49

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #07.1
July 1991

4921 Outdoor Microphones

Run No.	Event	MIC 10 CSEL	MIC 10 CPK	MIC 10 FSEL	MIC 10 FPK	MIC 9 ASEL	MIC 9 APK	MIC 11 ASEL	MIC 11 APK	MIC 10 ASEL	MIC 10 APK	MIC 4 FSEL	MIC 4 FPK
	BT	101	99	102	100	79	79	81	83	84	86	93	92
	FGF	79	88	91	90	69	84	72	92	73	87	82	85
	HB	90	107	101	115	66	87	61	89	64	84	108	120
	LB	83	100	92	106	61	79	58	78	60	84	98	110
	NGF	85	99	91	99	78	96	83	100	83	98	79	81
	NGS	78	93	88	93	66	91	71	95	72	93	76	75
	ST	94	91	95	92	70	74	73	78	76	82	87	86
	V1	100	104	101	105	89	94	92	100	96	100	90	91
	V2	94	98	96	99	81	87	83	92	88	94	85	87
	V3	94	98	97	100	74	82	76	85	81	88	93	95
	V4	95	100	96	104	72	78	72	80	78	84	87	93
	V5	83	87	90	90	68	75	68	80	73	84	81	84
	V6	85	88	92	90	67	85	62	78	65	83	82	83

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	68	71	67	74	71	68	71	67	69	70
	FGF	50	49	52	52	51	50	51	49	51	50
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	61	60	62	63	60	59	59	58	61	60
	NGS	49	49	51	51	48	47	49	47	49	49
	ST	58	60	61	61	62	61	62	58	61	60
	V1	72	71	72	72	71	70	70	70	71	71
	V2	63	64	64	65	64	63	63	62	64	64
	V3	61	59	63	62	62	62	63	58	62	60
	V4	57	57	61	59	59	60	59	54	59	58
	V5	52	52	52	55	52	50	51	50	52	52
	V6	48	47	50	50	49	50	50	46	49	48

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #07.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	MIC 10 CPK	MIC 10 FSEL	MIC 10 FPK	MIC 9 ASEL	MIC 9 APK	MIC 11 ASEL	MIC 11 APK	MIC 10 ASEL	MIC 10 APK	MIC 4 FSEL	MIC 4 FPK
	BT	101	99	102	100	79	82	81	83	84	86	93	92
	FGF	79	90	89	90	70	87	74	92	74	90	79	76
	HB	92	108	102	117	67	88	62	90	64	84	106	119
	LB	86	103	93	109	63	79	58	80	63	85	97	109
	NGF	84	99	90	99	78	96	82	98	83	99	80	81
	NGS	78	95	89	95	69	93	74	99	73	95	79	78
	ST	95	92	96	93	71	70	73	79	77	84	87	87
	V1	102	106	103	106	91	97	94	102	97	102	92	94
	V2	94	98	95	99	82	89	83	92	88	94	85	87
	V3	94	97	97	100	74	82	77	86	81	87	94	98
	V4	95	94	96	95	73	81	73	80	78	85	86	86
	V5	84	87	90	90	68	86	69	80	73	85	83	84
	V6	84	85	90	88	64	86	62	78	65	82	81	82

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	61	63	67	73	72	67	71	67	68	68
	FGF	46	43	53	53	52	51	51	50	50	49
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	53	52	62	63	59	59	60	59	59	58
	NGS	45	43	54	54	50	50	51	50	50	49
	ST	54	54	63	63	62	62	63	59	60	59
	V1	66	65	73	73	73	72	72	71	71	70
	V2	57	[illegible]	64	65	64	64	63	62	62	62
	V3	54	53	62	62	62	61	63	58	60	59
	V4	50	51	59	59	58	59	57	54	56	56
	V5	47	46	52	55	53	51	52	51	51	51
	V6	43	40	51	49	49	49	51	46	49	46

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #08.1
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 4 FSEL	FPK
	BT	102	100	103	101	77	78	81	83	84	83	90	88
	FGF	79	87	89	87	68	85	72	89	73	87	84	78
	HB	94	110	104	119	66	90	61	93	62	82	103	116
	LB	88	105	95	111	59	79	57	77	59	76	95	107
	NGF	84	97	89	97	78	95	82	97	83	96	84	77
	NGS	79	96	89	96	70	94	73	96	74	96	84	76
	ST	95	95	96	95	72	73	74	83	77	80	86	83
	V1	102	106	103	105	92	97	94	101	97	102	88	88
	V2	93	98	95	99	82	90	82	90	88	94	86	84
	V3	95	98	98	103	74	82	77	86	81	87	90	93
	V4	95	95	96	96	73	81	73	83	78	86	86	86
	V5	84	88	89	90	68	75	69	82	73	80	85	83
	V6	84	86	90	90	60	66	61	81	64	79	85	80

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	58	59	63	62	69	69	67	63	64	63
	FGF	48	46	46	44	51	50	51	49	49	47
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	56	56	53	52	60	59	59	59	57	56
	NGS	50	48	47	45	52	52	51	50	50	49
	ST	59	60	56	56	64	63	64	60	61	60
	V1	69	69	67	65	73	72	72	72	70	70
	V2	60	61	56	55	64	63	63	62	61	60
	V3	58	56	56	57	62	61	64	58	60	58
	V4	56	55	53	53	58	60	57	54	56	56
	V5	51	50	45	46	54	51	52	51	50	50
	V6	47	44	45	44	49	49	49	45	48	46

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data Test #08.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	103	100	104	101	77	80	81	82	84	84	91	90
	FGF	81	86	89	87	70	86	74	91	74	85	84	78
	HB	95	111	103	119	68	93	62	93	62	84	105	117
	LB	88	106	95	112	61	82	56	83	60	79	96	109
	NGF	85	98	90	98	79	96	83	99	83	98	84	79
	NGS	79	96	89	96	69	94	74	97	74	95	84	78
	ST	95	94	96	94	71	72	73	81	77	80	87	84
	V1	102	106	103	106	91	97	94	102	97	102	89	90
	V2	94	98	95	99	82	90	82	91	89	95	86	85
	V3	94	97	97	100	74	81	76	85	81	87	93	96
	V4	95	95	96	96	73	79	73	82	79	85	87	87
	V5	85	88	90	90	67	75	68	81	73	80	85	83
	V6	84	86	90	90	61	67	62	80	65	80	85	82

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	64	65	69	69	69	69	72	66	69	67
	FGF	52	51	54	54	52	51	51	50	52	52
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	61	61	64	63	61	60	59	59	61	61
	NGS	53	52	54	54	52	51	51	50	52	52
	ST	61	63	62	62	64	62	64	60	63	62
	V1	72	71	74	74	73	72	72	72	73	72
	V2	63	64	66	65	64	64	64	62	64	64
	V3	60	60	63	64	62	62	62	58	62	61
	V4	57	58	61	61	58	60	58	54	58	58
	V5	53	53	53	54	53	52	52	51	53	52
	V6	49	46	51	51	49	49	49	45	50	48

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data
July 1991

Test #09.1

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	101	99	102	100	79	78	81	83	84	86	92	90
	FGF	78	88	88	88	68	84	73	91	73	87	85	77
	HB	96	113	104	120	69	95	62	93	64	87	106	119
	LB	90	107	96	113	63	87	56	72	60	82	98	111
	NGF	85	99	90	99	79	95	83	98	84	98	85	78
	NGS	79	96	89	96	69	91	74	98	75	96	85	77
	ST	95	93	96	93	71	71	73	76	77	84	87	83
	V1	101	107	102	107	91	95	94	101	97	102	89	90
	V2	93	98	95	98	81	87	82	91	88	95	86	86
	V3	94	97	96	99	74	82	76	85	80	87	89	90
	V4	94	94	96	95	71	76	73	80	78	84	86	83
	V5	84	89	90	90	68	76	69	78	74	83	85	81
	V6	83	88	90	90	60	74	60	73	63	86	86	81

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	67	71	67	74	72	68	71	68	69	70
	FGF	50	48	51	51	50	50	50	48	50	49
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	60	60	62	63	61	60	60	59	61	61
	NGS	52	52	54	54	52	51	52	51	52	52
	ST	59	61	62	62	64	62	63	59	62	61
	V1	71	71	73	73	73	72	73	72	72	72
	V2	63	63	64	65	64	64	64	63	64	64
	V3	60	59	62	61	62	62	62	59	61	60
	V4	56	57	59	57	57	59	57	53	57	57
	V5	52	53	52	54	53	52	52	50	52	52
	V6	48	46	49	48	48	48	48	43	48	46

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data		Test #09.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	CPK	FSEL	FPK	MIC 9 ASEL	APK	MIC 11 ASEL	APK	MIC 10 ASEL	APK	MIC 2 FSEL	FPK
	BT	101	99	102	99	79	79	81	82	84	85	92	90
	FGF	81	89	89	89	69	86	74	93	74	86	85	78
	HB	96	113	105	121	70	95	64	93	65	87	107	119
	LB	89	107	96	113	62	83	56	75	61	83	97	109
	NGF	85	98	89	98	79	95	83	98	84	98	85	78
	NGS	79	96	88	96	69	93	75	98	75	97	85	78
	ST	95	92	96	93	70	72	73	76	76	83	87	83
	V1	101	106	102	106	90	95	94	101	97	102	89	90
	V2	93	98	95	98	81	87	82	90	88	94	86	85
	V3	94	98	97	100	74	82	76	85	81	88	90	91
	V4	95	94	96	94	71	78	73	80	78	82	87	84
	V5	83	88	88	89	67	75	69	78	73	82	85	81
	V6	83	87	89	88	61	70	62	74	65	80	85	81

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	68	71	67	73	72	69	61	57	67	67
	FGF	50	49	51	51	51	50	44	43	49	48
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	60	60	63	63	61	60	52	50	59	58
	NGS	52	51	54	54	52	51	42	40	50	49
	ST	59	61	62	62	64	62	55	51	60	59
	V1	71	71	73	73	73	73	62	61	70	69
	V2	63	63	64	65	64	64	53	51	61	61
	V3	60	59	62	61	62	61	51	49	59	58
	V4	56	57	59	58	58	59	50	45	56	55
	V5	52	53	52	55	53	50	46	44	51	50
	V6	48	47	49	46	47	47	44	41	47	45

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data — Test #10.1
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	MIC 10 CPK	MIC 10 FSEL	MIC 10 FPK	MIC 9 ASEL	MIC 9 APK	MIC 11 ASEL	MIC 11 APK	MIC 10 ASEL	MIC 10 APK	MIC 4 FSEL	MIC 4 FPK
	BT	102	99	103	100	76	77	80	79	83	82	91	89
	FGF	78	88	93	87	67	78	71	84	73	83	87	85
	HB	103	120	110	127	77	103	73	93	76	96	109	122
	LB	98	117	103	120	73	98	70	94	72	92	100	116
	NGF	85	95	94	95	78	92	82	95	84	95	87	82
	NGS	81	94	94	94	69	89	74	93	75	95	87	80
	ST	95	94	97	94	71	81	73	73	77	77	88	86
	V1	101	105	103	106	90	97	94	101	97	102	90	89
	V2	94	99	97	99	81	88	83	92	89	95	88	85
	V3	94	97	98	99	73	81	76	85	80	87	90	90
	V4	94	96	97	98	71	78	73	80	78	82	88	88
	V5	84	89	94	91	67	75	69	78	74	80	87	82
	V6	83	87	94	89	60	65	59	70	63	71	87	84

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	65	66	68	68	69	68	65	71	67	68
	FGF	57	48	64	63	49	49	50	50	55	53
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	59	59	63	65	60	59	59	59	60	61
	NGS	51	51	69	76	51	51	51	52	56	57
	ST	60	63	60	76	65	62	60	65	61	66
	V1	71	71	63	63	73	73	71	72	70	70
	V2	63	63	64	65	65	65	63	64	64	64
	V3	60	59	69	69	62	62	58	61	62	63
	V4	56	56	63	62	57	59	54	57	57	59
	V5	51	52	61	62	53	51	51	52	54	54
	V6	48	46	49	0	47	48	46	51	47	36

0 INDICATES MEANINGLESS DATA

Munster, Germany
Noise Data   Test #10.2
July 1991

Run No.	Event	4921 Outdoor Microphones MIC 10 CSEL	MIC 10 CPK	MIC 10 FSEL	MIC 10 FPK	MIC 9 ASEL	MIC 9 APK	MIC 11 ASEL	MIC 11 APK	MIC 10 ASEL	MIC 10 APK	MIC 8 FSEL	MIC 8 FPK
	BT	102	99	102	100	76	82	80	80	82	84	92	91
	FGF	80	88	90	88	66	76	70	83	71	82	88	86
	HB	103	121	109	126	78	107	75	94	77	105	109	122
	LB	95	115	100	118	71	96	67	84	70	90	99	114
	NGF	85	99	91	99	78	92	83	97	84	100	88	87
	NGS	81	98	90	98	70	90	74	97	76	98	88	95
	ST	94	93	96	94	70	74	73	73	76	84	89	87
	V1	101	106	102	106	90	96	94	102	97	102	91	91
	V2	94	98	95	99	82	88	83	91	89	95	88	91
	V3	94	97	97	100	74	85	77	86	81	87	91	97
	V4	94	94	96	95	71	77	73	81	78	84	89	89
	V5	84	89	90	91	67	82	68	78	73	81	88	88
	V6	85	86	91	89	62	78	61	71	65	81	88	89

Run No.	Event	MIC1 ASEL	MIC2 ASEL	MIC3 ASEL	MIC4 ASEL	MIC5 ASEL	MIC6 ASEL	MIC7 ASEL	MIC8 ASEL	ODDS	EVENS
	BT	65	66	65	69	0	0	64	70	48	51
	FGF	49	47	63	63	0	0	48	50	40	40
	HB	0	0	0	0	0	0	0	0	0	0
	LB	0	0	0	0	0	0	0	0	0	0
	NGF	60	60	76	75	0	0	59	60	49	49
	NGS	52	52	55	54	0	0	52	56	40	40
	ST	60	62	59	60	0	0	59	64	45	47
	V1	71	70	69	69	0	0	71	72	53	53
	V2	63	64	65	67	0	0	63	65	48	49
	V3	60	59	61	60	0	0	59	63	45	45
	V4	56	57	68	67	0	0	54	58	45	45
	V5	51	52	60	60	0	0	51	61	40	43
	V6	50	47	56	55	0	0	46	54	38	39

0 INDICATES MEANINGLESS DATA

Appendix C: Indoor Measured Acoustical Data for Blast Sounds

MUNSTER INDOOR BLAST DATA TEST# 01.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	89.2	100.6	76.9	88.7	43.9	60.3	90.8	102.5	78.9	94.7	44.9	58.7
14 HIGH	92.5	104.1	84.1	97.3	55.7	74.3	93.1	107.5	85.3	101.1	52.5	70.9
16 HIGH	93.0	104.1	84.3	97.9	55.8	78.4	92.6	107.5	85.5	101.3	52.3	67.9
19 HIGH	91.6	104.5	84.0	98.9	55.2	76.8	92.5	107.2	85.0	101.3	51.6	67.4
23 HIGH	92.1	103.9	83.3	96.4	54.9	76.6	92.5	106.1	84.2	98.4	49.5	64.3
32 HIGH	92.5	104.4	84.4	98.6	55.7	77.3	92.9	107.4	85.2	101.1	52.0	68.0
35 HIGH	91.8	103.0	82.3	96.6	54.0	76.4	92.3	105.4	82.8	97.3	49.3	64.3
40 HIGH	91.6	102.3	81.3	95.3	53.8	77.8	91.8	104.8	82.2	96.8	47.6	6[illegible].7
45 HIGH	90.5	102.1	80.4	93.6	53.1	75.0	91.7	104.0	81.9	95.1	46.5	61.3
49 HIGH	91.4	101.8	80.7	94.7	53.3	76.6	91.3	104.5	80.9	96.7	46.0	62.2
AVERAGE	91.6	103.1	82.4	96.2	54.1	76.2	92.1	105.8	83.4	98.8	49.7	65.8

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH							89.7	102.7	77.8	91.6	44.6	61.6
14 HIGH	94.6	105.8	80.4	93.9	50.1	67.2	92.9	106.5	86.4	99.9	54.1	76.5
16 HIGH	96.1	109.1	85.4	101.3	55.4	73.6	92.7	106.3	86.1	99.5	53.3	75.0
19 HIGH	95.9	108.9	85.7	101.4	54.9	72.2	92.3	105.7	85.8	99.7	53.6	74.8
23 HIGH	96.4	108.4	83.7	97.9	53.6	71.8	91.7	105.0	82.9	97.4	52.2	74.2
32 HIGH	96.3	109.0	85.6	101.3	55.2	72.6	92.3	106.0	85.4	99.0	53.8	76.9
35 HIGH	95.8	108.0	84.0	97.7	53.4	71.7	91.5	104.8	81.8	96.2	50.8	71.4
40 HIGH	95.7	107.4	83.1	96.1	52.3	70.6	91.2	105.2	82.7	97.0	49.6	68.5
45 HIGH	94.9	106.5	81.5	94.9	52.6	71.1	90.9	104.0	81.8	93.8	48.4	65.2
49 HIGH	95.9	107.4	82.6	96.2	52.1	70.5	91.8	104.7	83.2	96.1	49.7	69.3
AVERAGE	95.7	107.8	83.6	98.2	53.3	71.4	91.7	105.1	83.8	97.5	51.5	72.7

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	86.0	97.0	77.3	91.4	46.5	61.4	88.4	98.6	77.8	94.7	46.7	62.7
7 LOW	85.3	95.0	73.4	86.2	41.9	59.1	87.2	95.7	73.6	89.1	42.5	54.2
37 LOW	87.6	98.4	79.1	92.7	50.6	72.4	87.2	99.4	79.2	95.3	46.1	63.1
44 LOW	87.4	98.1	78.1	91.3	50.3	71.2	88.2	98.0	77.5	93.8	45.9	61.3
55 LOW	87.6	95.8	73.6	84.8	46.1	65.3	85.7	94.8	72.0	88.3	41.4	54.6
AVERAGE	86.9	97.1	76.9	90.3	48.1	68.6	87.4	97.6	76.8	93.1	45.0	60.6

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	89.3	99.8	78.5	95.9	49.1	64.6	86.2	96.0	76.9	90.2	44.6	63.2
7 LOW	88.7	97.2	73.1	88.8	44.3	62.6	85.0	94.9	73.2	85.2	42.5	54.5
37 LOW	89.2	101.0	79.2	96.4	49.2	64.3	88.2	98.3	80.2	93.0	46.2	59.0
44 LOW	88.4	99.7	77.2	95.1	48.0	63.8	87.1	97.4	78.5	91.7	45.0	58.7
55 LOW	88.9	97.9	73.1	88.9	44.0	63.8	87.3	96.2	74.6	88.1	44.5	67.4
AVERAGE	89.0	99.7	77.7	95.1	48.3	64.0	86.7	96.7	77.7	90.7	44.7	60.8

MUNSTER INDOOR BLAST DATA TEST# 01.2

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	93.4	106.7	83.8	99.8	54.6	78.6
20 HIGH	94.2	109.6	86.4	103.5	57.0	81.0
26 HIGH	94.5	110.0	86.6	104.0	57.6	80.0
29 HIGH	92.9	107.3	84.2	101.2	55.2	78.8
32 HIGH	91.2	104.0	80.2	94.7	51.4	74.9
33 HIGH	92.1	104.5	81.6	97.2	53.4	76.7
40 HIGH	92.4	104.7	32.3	98.3	54.0	77.6
44 HIGH	92.5	106.5	83.7	100.4	55.1	79.2
49 HIGH	94.7	109.8	86.7	104.0	58.0	80.9
50 HIGH	94.6	109.4	86.3	103.2	57.7	80.4
	93.4	107.8	84.7	101.5	55.9	79.2

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	92.4	105.1	81.5	96.0	46.5	61.8
20 HIGH	93.4	107.9	85.6	101.2	52.1	68.2
26 HIGH	93.7	108.2	85.7	101.4	52.6	82.0
29 HIGH	92.[illegible]	106.0	83.5	98.1	50.3	64.9
32 HIGH						
33 HIGH	92.0	104.3	79.9	93.4	45.5	61.8
40 HIGH	91.9	104.7	81.0	94.8	46.3	60.9
44 HIGH	92.4	106.1	83.0	97.7	48.0	63.2
49 HIGH	94.5	108.3	86.4	100.4	51.9	67.2
50 HIGH	94.3	108.1	86.3	99.9	52.1	67.2
	93.1	106.8	84.2	98.9	50.3	73.1

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	97.3	108.9	82.4	95.8	52.7	70.7
20 HIGH	97.1	109.8	85.7	101.8	56.0	74.4
26 HIGH	97.7	109.9	86.4	101.8	55.7	75.0
29 HIGH	96.6	108.7	83.8	97.8	54.0	72.0
32 HIGH	95.9	107.5	80.0	92.5	49.8	66.2
33 HIGH	97.5	109.0	81.9	94.8	50.9	69.6
40 HIGH	97.3	108.9	82.6	95.9	52.5	71.0
44 HIGH	97.2	108.3	83.4	98.4	53.9	71.9
49 HIGH	98.9	110.1	86.0	100.8	55.5	75.7
50 HIGH	98.9	110.5	86.3	100.8	55.4	74.9
AVERAGE	97.5	109.2	84.3	99.0	54.1	72.9

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	92.1	104.8	81.4	95.2	47.7	64.7
20 HIGH	93.1	106.5	86.3	99.0	53.8	73.5
26 HIGH	93.2	106.3	86.6	99.9	54.0	75.5
29 HIGH	91.6	104.3	82.3	95.1	48.8	67.2
32 HIGH	93.7	104.6	78.9	91.2	44.8	61.3
33 HIGH	92.3	103.0	78.8	90.4	44.3	59.1
40 HIGH	92.3	103.4	81.1	93.7	47.4	64.6
44 HIGH	92.6	104.4	83.3	95.8	49.6	66.5
49 HIGH	94.7	106.3	87.7	100.1	55.3	75.6
50 HIGH	94.6	106.8	86.5	100.2	55.5	75.7
AVERAGE	93.1	105.2	84.4	97.3	51.8	71.7

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	86.2	98.2	76.1	90.7	47.7	67.6
17 LOW	86.3	97.6	74.3	88.9	47.3	68.2
19 LOW	87.2	98.5	76.5	92.1	48.8	71.5
21 LOW	87.9	98.5	76.7	92.7	49.1	71.2
52 LOW	88.8	101.9	79.9	96.8	51.8	75.8
AVERAGE	87.4	99.2	77.1	93.1	49.3	71.9

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	86.7	97.7	75.1	90.7	43.2	57.2
17 LOW	86.3	97.1	75.7	91.2	43.9	60.4
19 LOW	87.1	97.9	76.6	92.8	43.8	59.5
21 LOW	87.1	97.9	76.6	93.4	44.7	60.6
52 LOW	88.4	99.8	79.1	95.2	45.5	61.5
AVERAGE	87.2	98.2	76.9	93.0	44.3	60.1

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	88.2	98.9	75.0	91.1	45.0	59.5
17 LOW	88.8	98.8	75.1	91.9	45.5	63.3
19 LOW	89.3	99.8	76.6	93.5	45.9	61.7
21 LOW	89.6	99.7	77.7	94.8	47.9	62.6
52 LOW	90.4	102.6	80.1	97.1	49.4	65.4
AVERAGE	88.9	99.2	76.0	92.7	46.0	61.6

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	84.5	95.3	74.3	87.5	42.2	61.0
17 LOW	84.2	95.5	74.1	87.2	44.4	57.6
19 LOW	85.8	97.3	76.9	89.7	44.1	57.6
21 LOW						
52 LOW	88.0	101.0	82.2	95.6	49.8	64.6
AVERAGE	84.8	95.9	75.1	88.1	43.3	59.6

MUNSTER INDOOR BLAST DATA TEST#02.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	90.3	102.4	84.1	98.7	49.8	66.7	90.0	104.9	82.8	100.0	49.7	65.9
14 HIGH	90.0	102.6	83.3	97.6	49.5	66.5	90.1	104.6	83.6	99.8	50.6	65.3
16 HIGH	90.5	102.0	84.0	98.5	50.2	67.1	89.9	103.9	81.4	99.0	48.4	65.8
19 HIGH	90.5	103.4	84.5	98.7	51.0	68.9	90.7	105.0	84.0	101.1	51.6	68.0
23 HIGH	89.9	101.9	83.4	98.2	48.8	66.2	89.8	104.0	82.0	99.0	49.0	64.1
32 HIGH	88.7	100.2	81.3	96.5	48.8	66.0	88.5	102.8	79.4	97.0	47.0	64.1
35 HIGH	90.6	102.8	85.0	99.1	51.1	69.3	90.2	105.2	83.9	101.3	51.4	68.2
40 HIGH	90.5	102.6	84.9	100.1	51.4	69.3	90.4	105.7	84.5	101.8	52.3	69.2
45 HIGH	90.3	103.6	84.8	99.2	61.3	84.4	90.5	106.2	85.4	102.4	52.8	69.4
49 HIGH	91.2	103.9	85.8	101.2	52.7	69.8	91.2	107.1	85.9	103.0	53.3	70.1
AVERAGE	90.3	102.6	84.3	99.0	53.7	75.2	90.2	105.1	83.7	100.8	51.0	67.5

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	94.2	106.3	84.2	101.2	53.0	70.1	92.4	104.6	84.8	96.4	50.9	66.5
14 HIGH	94.3	106.0	84.7	100.9	53.4	70.2	93.1	105.8	85.7	97.6	51.6	67.8
16 HIGH	94.2	105.4	83.1	100.0	51.9	68.8	92.2	103.9	84.2	95.9	50.0	65.2
19 HIGH	94.1	106.8	85.9	103.0	55.3	72.7	92.8	105.0	85.6	96.7	51.7	66.8
23 HIGH	93.9	105.5	83.1	99.9	51.9	68.5	92.1	104.0	84.3	96.1	50.4	65.7
32 HIGH	92.9	104.2	81.5	98.6	50.5	68.4	91.4	102.2	82.0	93.9	49.1	63.7
35 HIGH	93.9	106.8	85.2	102.8	54.7	72.0	92.5	104.9	86.0	97.5	51.7	68.2
40 HIGH	93.8	107.4	85.7	103.6	55.8	73.6	92.7	104.8	86.5	98.1	52.4	69.4
45 HIGH	95.2	108.0	87.1	104.1	57.2	73.6	93.6	106.2	87.3	99.1	56.3	75.7
49 HIGH	95.4	108.9	87.4	104.5	57.0	73.8	93.9	107.1	88.0	100.2	54.2	70.8
AVERAGE	94.2	106.7	85.1	102.3	54.6	71.7	92.7	105.0	85.7	97.5	52.3	69.5

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	86.8	99.8	80.1	95.0	48.4	64.4	86.8	99.0	79.5	96.1	47.8	64.4
7 LOW	87.1	99.6	79.8	94.4	48.2	63.9	86.0	97.4	78.5	95.5	46.9	62.8
37 LOW												
44 LOW	85.4	100.0	80.5	95.3	48.8	65.1	86.3	98.3	79.6	96.5	47.7	64.2
55 LOW	87.0	100.9	81.8	96.7	49.7	66.8	87.7	99.7	80.8	98.0	49.1	66.1
AVERAGE	86.6	100.1	80.6	95.4	48.8	65.2	86.7	98.7	79.7	96.6	47.9	64.5

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	88.8	100.8	82.4	98.1	51.2	67.1	88.1	99.5	81.4	92.9	48.0	61.0
7 LOW	88.9	98.7	81.2	97.3	50.3	65.7	87.7	98.1	79.9	92.6	47.4	60.8
37 LOW												
44 LOW	88.8	100.1	82.3	98.6	51.6	68.4	88.0	98.8	81.1	93.3	48.0	62.6
55 LOW	89.2	101.4	83.5	100.3	52.9	70.0	88.5	99.7	82.5	95.4	49.3	63.3
AVERAGE	88.9	100.4	82.4	98.7	51.6	68.1	88.1	99.1	81.3	93.7	48.2	62.1

MUNSTER INDOOR BLAST DATA TEST# 02.2

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	90.0	102.4	82.2	98.0	49.0	67.4	91.0	105.7	83.4	100.6	52.9	67.7
20 HIGH	89.3	100.4	81.1	96.4	48.6	65.5	89.8	103.6	81.3	98.4	71.9	91.5
26 HIGH	89.7	100.5	80.8	95.6	48.2	64.8	90.0	103.8	81.2	98.3	48.9	64.4
29 HIGH	89.5	100.2	80.1	93.7	46.9	62.5	89.0	101.8	77.8	95.1	45.7	61.1
32 HIGH												
33 HIGH	89.6	100.8	81.5	95.7	47.9	64.5	89.5	103.1	80.3	97.2	47.6	62.9
40 HIGH	89.9	100.6	79.8	94.0	48.2	63.6	89.5	102.6	79.8	97.0	48.2	63.8
44 HIGH												
49 HIGH	88.3	100.0	78.8	93.0	46.6	62.3	89.2	101.0	78.1	95.0	46.6	62.8
50 HIGH	89.0	99.8	79.5	93.5	46.9	63.0	89.3	101.7	78.0	95.5	47.0	61.9
AVERAGE	89.4	100.7	80.6	95.3	47.9	64.5	89.7			97.5	63.0	82.5

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	94.6	107.0	85.4	102.0	55.7	74.7	92.2	104.9	85.0	96.6	51.6	68.8
20 HIGH	93.1	104.9	82.8	100.2	52.2	69.7	91.0	102.9	82.7	94.0	49.0	63.5
26 HIGH	93.8	105.0	83.1	99.7	51.8	69.1	91.6	104.4	83.7	95.5	49.5	64.5
29 HIGH	93.4	103.5	80.2	96.1	48.8	64.8	90.7	102.4	79.9	91.9	46.7	58.4
32 HIGH												
33 HIGH	93.4	104.5	82.3	98.5	50.5	67.0	91.0	103.7	82.4	93.7	48.2	61.9
40 HIGH	93.7	104.3	82.1	98.8	52.4	70.3	91.1	103.9	81.3	92.6	47.9	61.0
44 HIGH												
49 HIGH	92.5	102.9	80.4	96.5	49.4	70.6	90.4	103.3	80.2	92.1	46.5	59.6
50 HIGH	92.8	103.6	80.6	97.1	50.1	66.3	90.6	102.6	80.2	92.0	47.0	63.3
AVERAGE	93.5	104.6	82.4	99.0	51.9	70.1	91.1	103.6	82.3	93.9	48.6	63.8

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	86.1	99.0	79.1	94.2	48.1	64.5	87.0	98.3	79.3	96.0	48.1	63.3
17 LOW	86.8	98.3	78.2	92.8	47.3	62.8	85.7	97.4	78.2	95.4	46.5	63.8
19 LOW	86.5	98.5	78.8	93.5	47.6	63.5	86.9	98.0	79.3	95.9	47.5	62.9
21 LOW	86.4	97.0	76.9	91.9	46.5	61.6	86.8	96.6	77.2	94.1	46.7	62.6
52 LOW												
AVERAGE	86.5	98.3	78.3	93.2	47.4	63.2	86.6	97.6	78.6	95.4	47.2	63.2

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	89.4	100.0	82.9	98.3	52.0	67.8	87.4	99.4	80.6	92.1	47.4	61.7
17 LOW	88.3	98.9	81.5	97.6	50.5	66.5	87.7	98.5	80.6	92.4	47.5	61.0
19 LOW	88.7	99.7	82.4	97.9	51.1	66.4	87.5	99.1	81.4	92.5	47.6	62.8
21 LOW	88.6	98.3	80.4	96.3	49.6	65.2	86.9	97.8	79.0	89.7	46.2	60.3
52 LOW												
AVERAGE	89.0	99.7	82.5	98.0	51.4	67.2	87.5	99.1	80.8	92.3	47.5	61.8

MUNSTER INDOOR BLAST DATA TEST# 03.1

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	89.6	103.0	84.4	99.2	51.9	68.3
14 HIGH	87.3	100.6	80.8	95.7	48.5	64.9
16 HIGH						
19 HIGH	88.5	101.6	83.2	98.1	51.3	68.8
23 HIGH	89.2	102.5	83.8	99.5	50.8	69.0
32 HIGH	88.0	101.2	82.1	96.9	49.9	65.4
35 HIGH						
40 HIGH	90.0	103.3	85.0	101.4	56.8	76.8
46 HIGH	89.7	102.7	84.2	98.5	52.5	69.5
49 HIGH	90.3	104.0	85.2	100.1	53.3	70.0
AVERAGE	89.2	102.5	83.8	99.0	52.6	70.8

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	89.7	104.1	84.2	100.3	50.9	69.1
14 HIGH	87.6	100.0	80.1	96.5	47.2	63.0
16 HIGH	87.8	100.5	79.3	96.4	47.3	62.8
19 HIGH	88.9	102.5	82.6	100.0	50.3	67.9
23 HIGH	89.0	102.9	83.3	100.4	49.8	67.2
32 HIGH	88.3	101.3	81.9	98.1	48.8	65.1
35 HIGH	88.7	103.0	83.1	100.2	49.8	67.6
40 HIGH	89.8	104.6	84.6	102.1	54.4	74.9
46 HIGH	89.5	104.2	83.8	100.8	51.6	67.6
49 HIGH	89.5	105.0	84.5	100.8	51.0	68.2
AVERAGE	88.9	103.1	83.0	99.9	50.6	68.8

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	91.7	104.1	86.0	101.2	54.2	70.3
14 HIGH	90.1	101.9	82.1	98.1	51.0	68.0
16 HIGH	90.2	102.0	82.3	97.8	51.1	66.3
19 HIGH	91.4	104.8	85.1	102.6	55.1	72.4
23 HIGH	91.5	105.1	85.0	102.4	54.3	71.6
32 HIGH	90.6	103.5	83.9	100.1	53.2	70.0
35 HIGH	91.4	105.1	85.3	101.9	54.7	70.8
40 HIGH	92.3	107.1	86.6	103.4	57.8	76.1
46 HIGH	93.1	105.9	86.4	101.9	55.6	73.4
49 HIGH	92.5	105.2	86.9	101.1	55.3	73.0
AVERAGE	91.6	104.7	85.2	101.4	54.7	72.0

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	91.6	103.5	86.4	98.0	52.0	66.6
14 HIGH	89.3	100.5	82.2	93.8	48.8	69.4
16 HIGH	89.4	102.2	82.5	94.1	48.5	60.6
19 HIGH	90.9	102.9	85.3	96.2	50.8	64.6
23 HIGH	91.4	103.0	86.1	97.6	51.5	65.4
32 HIGH	90.6	101.8	84.9	96.3	50.3	63.8
35 HIGH	91.2	102.6	85.2	96.6	51.0	67.6
40 HIGH	92.5	104.7	87.4	99.6	54.3	72.3
46 HIGH	92.2	104.9	87.0	98.6	52.9	68.3
49 HIGH	92.7	105.2	88.0	99.6	53.4	68.5
AVERAGE	91.3	103.4	85.9	97.4	51.7	67.8

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	83.5	93.1	72.3	88.1	44.2	62.7
7 LOW	84.6	95.3	75.4	91.0	46.3	61.7
37 LOW	84.2	95.3	74.3	90.2	45.4	61.5
44 LOW	84.8	97.5	77.5	93.1	47.5	63.4
55 LOW	85.1	95.3	75.8	90.2	45.3	60.0
AVERAGE	84.5	95.5	75.4	90.8	45.9	62.0

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	85.2	92.3	73.0	89.4	44.6	61.4
7 LOW	85.0	95.1	75.1	91.2	45.2	61.7
37 LOW	85.4	93.3	74.1	90.8	45.0	63.0
44 LOW	85.0	96.3	76.7	93.0	46.1	62.3
55 LOW	84.6	95.2	76.2	91.4	44.7	59.9
AVERAGE	85.0	94.7	75.2	91.3	45.2	61.8

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	85.2	95.4	76.7	92.1	46.9	63.3
7 LOW	85.4	96.2	78.3	93.4	48.1	64.0
37 LOW	86.8	95.0	77.6	92.8	47.7	63.3
44 LOW	87.2	97.3	79.9	95.1	49.4	65.5
55 LOW	86.0	96.8	78.0	92.1	47.7	72.9
AVERAGE	86.0	95.9	78.0	93.3	47.9	64.0

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	86.5	93.5	74.2	86.1	46.0	56.4
7 LOW	86.5	94.1	77.0	88.8	46.3	58.6
37 LOW	87.7	95.0	75.4	87.6	46.3	59.5
44 LOW	86.8	96.5	79.1	90.7	47.2	62.0
55 LOW	86.7	95.9	78.7	89.7	46.9	64.8
AVERAGE	86.8	94.7	76.4	88.2	46.4	59.1

MUNSTER INDOOR BLAST DATA TEST# 03.2

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	88.8	100.8	82.7	96.5	49.4	65.7
20 HIGH	87.1	98.0	79.0	93.5	46.9	61.9
26 HIGH	85.9	97.5	76.6	90.6	45.5	63.0
29 HIGH	86.3	98.1	78.4	92.4	46.5	63.2
32 HIGH	87.1	97.3	77.4	93.0	46.2	62.5
33 HIGH	87.5	99.2	78.7	93.2	46.3	62.7
40 HIGH	88.8	99.4	79.4	94.7	47.9	65.3
44 HIGH	87.8	99.1	79.8	95.2	48.2	64.7
49 HIGH	89.0	101.1	81.8	96.9	49.6	66.2
50 HIGH	87.4	98.4	78.3	94.6	46.6	64.1
AVERAGE	87.7	99.1	79.6	94.4	47.5	64.2

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	89.2	102.3	82.6	98.5	49.3	65.5
20 HIGH	87.0	100.0	79.5	96.3	47.7	64.9
26 HIGH	86.1	97.6	77.5	93.6	45.8	59.7
29 HIGH	86.5	98.1	78.4	94.6	46.2	61.1
32 HIGH	87.8	100.6	78.8	94.7	45.8	60.9
33 HIGH	88.5	100.9	79.1	95.5	46.1	60.2
40 HIGH	88.7	102.2	80.4	97.4	48.8	66.5
44 HIGH	88.2	101.6	79.1	96.4	47.4	65.1
49 HIGH	89.3	103.5	81.9	99.3	48.8	64.7
50 HIGH	88.4	101.6	78.5	95.4	46.5	62.2
AVERAGE	88.1	101.2	79.9	96.5	47.4	63.7

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	92.2	105.4	85.7	100.6	53.6	70.6
20 HIGH	90.2	101.6	81.9	97.7	50.1	65.5
26 HIGH	89.7	100.3	81.0	95.5	49.6	64.1
29 HIGH	89.0	100.6	80.8	96.2	49.7	64.8
32 HIGH	91.9	102.7	80.0	96.3	49.1	65.5
33 HIGH	92.5	102.3	80.7	95.6	48.7	64.3
40 HIGH	92.6	103.9	82.6	99.2	52.1	68.4
44 HIGH	92.1	103.4	80.8	97.9	50.2	66.6
49 HIGH	93.3	104.7	83.4	99.8	52.4	69.6
50 HIGH	91.5	103.2	80.2	97.3	50.5	68.1
AVERAGE	91.7	103.1	82.1	98.0	50.9	67.3

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	91.1	103.2	85.9	97.3	51.2	65.7
20 HIGH	88.8	100.6	80.6	91.9	47.3	59.5
26 HIGH	88.6	100.5	79.8	91.2	47.2	58.9
29 HIGH	88.7	100.1	81.4	92.9	48.0	69.5
32 HIGH	89.4	101.6	78.4	90.2	45.8	58.0
33 HIGH	90.1	102.6	80.6	92.6	47.2	61.5
40 HIGH	90.8	103.4	82.0	92.9	48.4	60.1
44 HIGH	90.1	102.2	79.8	91.9	47.3	60.1
49 HIGH	91.5	104.0	84.0	95.6	50.1	65.3
50 HIGH	91.5	102.4	58.3	68.9	47.9	58.0
AVERAGE	90.2	102.2	81.5	93.1	48.3	63.5

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	85.5	96.1	75.9	91.6	47.2	63.8
17 LOW	84.2	93.3	73.1	87.2	44.3	61.6
19 LOW	84.7	95.0	75.3	90.0	45.3	62.1
21 LOW	85.1	95.6	76.0	91.1	45.8	60.5
52 LOW						
AVERAGE	84.9	95.1	75.2	90.3	45.8	62.2

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	86.2	95.1	76.4	92.7	46.6	61.7
17 LOW	84.6	93.4	73.9	89.4	43.9	57.5
19 LOW	85.1	95.2	76.7	91.6	44.9	61.7
21 LOW	85.7	96.3	77.1	92.0	46.4	61.7
52 LOW						
AVERAGE	85.4	95.1	76.2	91.6	45.6	61.0

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	86.5	97.9	80.2	95.2	49.3	64.6
17 LOW	85.6	96.1	76.7	90.9	46.2	60.4
19 LOW	86.3	97.7	79.0	93.5	47.7	62.4
21 LOW	87.2	98.2	80.0	94.2	49.0	63.5
52 LOW						
AVERAGE	86.2	97.5	79.2	94.0	48.3	63.3

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	86.1	96.2	78.0	89.4	46.5	58.3
17 LOW	85.8	94.1	76.0	87.2	45.4	57.7
19 LOW	86.1	95.7	77.7	88.6	47.7	71.4
21 LOW	86.4	95.3	79.0	90.6	46.4	61.7
52 LOW						
AVERAGE	86.0	95.6	77.5	88.7	46.6	66.0

MUNSTER INDOOR BLAST DATA TEST# 04

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	92.0	108.2	86.8	100.3	53.4	71.4
14 HIGH	95.3	110.2	90.2	104.6	57.9	77.1
16 HIGH	96.0	110.8	90.9	105.4	58.6	77.7
19 HIGH	94.2	108.7	89.0	103.2	56.4	76.5
23 HIGH	96.0	110.6	91.0	105.5	58.4	78.0
32 HIGH	95.5	109.3	90.4	105.0	58.0	78.2
35 HIGH	95.0	109.1	89.6	104.1	57.2	77.5
40 HIGH	95.9	110.1	90.6	104.4	58.1	77.8
46 HIGH	96.5	110.3	91.7	105.5	58.9	78.5
49 HIGH	96.9	110.7	91.7	105.4	58.7	78.1
AVERAGE	95.5	109.8	90.4	104.6	57.8	77.4

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	90.9	105.2	82.3	99.8	49.7	66.4
14 HIGH	94.9	110.1	88.1	103.7	55.3	70.5
16 HIGH	95.0	110.4	88.5	104.5	55.7	71.1
19 HIGH	93.9	108.6	86.8	102.4	54.5	69.1
23 HIGH	95.1	110.4	88.5	104.7	55.9	71.4
32 HIGH	94.9	110.3	88.6	104.8	55.9	71.3
35 HIGH	94.9	109.9	88.0	104.0	55.8	72.3
40 HIGH	95.2	109.9	88.1	103.9	55.8	73.9
46 HIGH	95.7	110.4	89.0	104.6	56.8	75.3
49 HIGH	96.4	110.6	89.5	104.2	58.2	78.4
AVERAGE	94.9	109.8	88.1	103.9	55.8	73.2

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	92.4	105.8	83.4	100.1	52.1	67.6
14 HIGH	97.0	111.1	87.1	104.6	57.3	75.7
16 HIGH	96.8	111.4	87.7	105.4	57.6	75.5
19 HIGH	95.8	109.6	85.6	103.2	55.5	73.8
23 HIGH	96.9	111.4	88.0	105.4	58.0	75.9
32 HIGH	96.9	111.3	88.2	105.6	58.3	75.7
35 HIGH	96.8	110.9	87.6	104.9	58.3	75.7
40 HIGH	97.2	110.8	87.4	104.4	57.8	76.1
46 HIGH	96.9	111.4	87.7	104.9	57.9	76.2
49 HIGH	97.6	111.6	87.6	104.3	58.0	75.3
AVERAGE	96.6	110.8	87.2	104.5	57.4	75.2

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	90.0	101.3	83.6	95.3	50.6	72.1
14 HIGH	93.0	105.8	86.4	100.6	55.2	73.2
16 HIGH	93.4	106.3	87.0	100.5	55.9	73.2
19 HIGH	92.6	105.9	85.5	98.5	53.2	73.3
23 HIGH	93.7	107.0	87.8	102.2	56.7	77.0
32 HIGH	93.4	106.7	87.0	101.7	55.7	77.0
35 HIGH	93.1	106.3	86.2	100.4	55.4	76.4
40 HIGH	92.9	106.1	86.1	100.3	55.9	77.4
46 HIGH	93.5	106.7	87.4	101.0	56.5	77.5
49 HIGH	93.9	106.4	87.7	101.1	57.6	78.4
AVERAGE	93.1	106.1	86.6	100.5	55.6	76.1

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	87.3	98.6	81.2	95.4	50.1	65.7
7 LOW	86.7	99.2	81.8	95.5	50.6	67.1
37 LOW	89.7	101.6	84.2	98.2	52.0	71.3
44 LOW	91.8	104.3	87.0	100.4	53.9	73.1
55 LOW	91.4	104.2	86.8	100.0	53.1	70.8
AVERAGE	89.9	102.2	84.8	98.4	52.2	70.4

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	87.4	98.2	77.8	95.7	48.7	64.2
7 LOW	85.9	98.2	77.3	95.3	48.0	64.2
37 LOW	87.9	102.4	81.1	98.8	50.1	66.2
44 LOW	90.0	103.4	83.2	100.5	52.0	67.2
55 LOW	89.9	102.9	83.0	99.4	51.0	66.2
AVERAGE	88.5	101.6	81.1	98.4	50.2	65.8

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	88.3	99.5	80.4	98.0	51.5	68.7
7 LOW	88.4	99.1	80.0	97.2	50.8	67.2
37 LOW	90.3	103.4	82.8	100.2	53.3	69.5
44 LOW	90.6	104.5	84.6	101.5	54.5	70.0
55 LOW	90.9	103.7	82.9	100.2	52.3	68.1
AVERAGE	89.3	101.8	82.0	99.3	52.5	68.9

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	86.7	94.0	76.7	89.8	46.3	61.8
7 LOW	86.4	93.6	76.9	89.9	46.5	61.6
37 LOW	87.9	98.7	80.1	92.7	48.2	64.1
44 LOW	89.2	99.9	82.8	95.4	50.6	67.3
55 LOW	89.6	99.4	82.3	94.0	50.5	67.1
AVERAGE	87.5	96.9	79.4	92.2	47.9	63.9

MUNSTER INDOOR BLAST DATA TEST# 04.2

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	95.8	109.7	90.7	105.0	56.2	72.3
20 HIGH	96.7	111.2	92.0	106.8	58.1	76.0
26 HIGH	98.8	112.8	94.4	108.5	60.4	79.7
29 HIGH	95.6	109.7	90.4	104.0	56.2	74.4
32 HIGH	95.3	109.9	89.9	104.2	56.0	73.4
33 HIGH	96.3	110.4	90.7	104.6	57.3	75.6
40 HIGH	96.1	110.2	90.8	104.5	57.6	77.3
44 HIGH	95.2	109.3	90.2	103.5	56.4	76.8
49 HIGH	94.6	108.0	89.0	102.8	56.0	74.6
50 HIGH	94.1	108.7	87.8	102.3	54.9	73.7
AVERAGE	96.0	110.2	90.9	104.9	57.2	75.9

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	95.3	110.8	88.5	104.7	55.6	72.2
20 HIGH	95.6	111.0	89.2	105.6	57.0	75.0
26 HIGH	96.9	112.7	91.4	108.2	60.4	78.6
29 HIGH	95.1	110.1	87.9	103.9	54.5	71.0
32 HIGH	94.8	109.5	87.6	103.1	54.4	71.0
33 HIGH	96.2	110.7	89.0	104.2	57.2	75.4
40 HIGH	95.5	110.2	88.5	104.1	56.4	73.6
44 HIGH	95.0	109.5	87.9	103.5	55.4	71.6
49 HIGH	95.0	109.2	87.6	102.4	54.7	70.5
50 HIGH	94.4	108.1	86.1	100.3	53.0	68.9
AVERAGE	95.4	110.3	88.6	104.5	56.4	73.7

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	97.3	111.8	88.3	104.7	58.9	76.7
20 HIGH	97.5	112.3	88.8	106.1	59.8	77.1
26 HIGH	98.1	114.0	91.2	108.9	62.2	79.9
29 HIGH	97.0	111.1	87.0	104.0	57.8	75.2
32 HIGH	96.6	110.5	86.0	103.1	56.8	76.2
33 HIGH	97.7	111.9	87.9	104.4	58.7	76.4
40 HIGH	97.2	111.3	87.5	104.2	58.5	75.2
44 HIGH	96.6	110.7	86.9	103.9	57.4	74.9
49 HIGH	96.7	110.4	86.2	102.7	56.8	74.6
50 HIGH	96.7	109.0	84.2	100.0	54.8	73.3
AVERAGE	97.2	111.5	87.8	104.8	58.6	76.3

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	95.1	106.1	89.2	102.1	57.1	75.3
20 HIGH	94.9	106.7	88.5	101.7	57.0	76.7
26 HIGH	96.6	109.1	91.7	106.0	60.8	79.8
29 HIGH	94.1	105.6	87.3	101.0	55.6	77.1
32 HIGH	93.7	104.9	86.0	99.2	55.2	77.2
33 HIGH	94.2	104.6	86.8	100.9	57.5	79.5
40 HIGH	93.9	103.8	84.6	98.3	56.4	77.5
44 HIGH	93.8	105.2	85.9	99.7	55.9	77.3
49 HIGH	93.2	104.0	84.3	97.9	55.1	76.8
50 HIGH	93.4	104.3	83.9	97.3	54.2	76.4
AVERAGE	94.4	105.7	87.5	101.2	56.9	77.6

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	91.7	104.0	86.7	100.1	53.7	69.1
17 LOW	91.5	104.5	87.1	101.2	54.4	71.1
19 LOW	90.7	103.8	86.1	99.6	53.5	70.0
21 LOW						
52 LOW	89.5	101.8	83.7	96.5	50.3	66.1
AVERAGE	90.0	102.7	85.1	98.7	52.3	68.5

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	89.8	103.8	83.7	100.8	51.8	67.1
17 LOW	90.1	103.8	84.6	101.6	53.3	69.6
19 LOW	89.6	102.9	83.3	100.3	51.9	68.0
21 LOW						
52 LOW	89.4	100.8	80.1	96.9	49.0	63.4
AVERAGE	88.8	102.0	82.2	99.3	50.8	66.6

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	91.5	105.0	84.3	101.6	54.8	70.7
17 LOW	91.4	105.1	85.5	102.9	56.3	72.8
19 LOW	91.3	103.9	84.1	101.3	54.4	70.2
21 LOW						
52 LOW	89.8	101.9	80.6	97.8	50.7	66.1
AVERAGE	90.5	103.8	83.6	100.9	54.2	70.3

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	90.8	99.6	83.4	96.2	50.8	66.6
17 LOW	91.0	100.4	83.8	97.1	50.9	66.1
19 LOW	90.4	98.8	82.0	95.2	49.7	64.6
21 LOW						
52 LOW	90.7	98.1	79.2	91.6	48.9	62.3
AVERAGE	89.8	98.7	82.2	95.3	49.6	65.1

MUNSTER INDOOR BLAST DATA TEST# 06.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	96.2	108.7	90.1	104.4	56.8	72.8	95.8	109.8	88.5	104.9	57.0	75.5
14 HIGH	94.3	106.0	87.3	101.1	55.5	71.2	94.1	106.1	84.5	102.7	53.9	70.4
16 HIGH	95.8	108.6	90.6	104.2	57.8	74.1	95.3	108.3	88.0	104.8	56.1	70.7
19 HIGH	93.4	104.2	85.6	98.8	53.2	68.3	93.3	104.5	82.4	100.2	51.4	66.4
23 HIGH	94.0	105.0	86.3	99.9	53.9	68.7	93.9	105.5	83.8	101.8	52.8	68.8
32 HIGH	94.0	105.3	86.6	100.3	54.4	69.6	93.1	105.5	83.8	101.7	52.2	68.3
35 HIGH	94.6	105.8	87.5	101.0	55.2	69.6	94.0	106.1	85.1	102.6	53.9	69.6
40 HIGH	93.9	105.3	87.1	100.1	54.0	69.5	94.3	106.0	84.9	101.6	53.3	67.8
46 HIGH	95.0	105.9	88.1	101.4	55.6	70.4	94.7	106.5	86.4	102.1	54.5	68.5
49 HIGH	94.6	105.1	88.1	100.8	55.3	70.4	94.4	106.6	86.0	101.8	54.2	69.7
AVERAGE	94.7	106.2	88.0	101.6	55.4	70.8	94.4	106.8	85.7	102.7	54.2	70.4

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	97.5	111.2	88.0	105.9	58.2	75.0						
14 HIGH	95.7	107.6	87.1	104.6	58.1	73.9	94.2	102.7	84.4	97.6	53.5	71.8
16 HIGH	96.6	109.8	88.8	106.2	58.5	74.6	95.0	103.7	87.3	100.4	56.6	75.9
19 HIGH	95.4	106.0	84.6	101.9	55.2	70.9	94.2	101.8	83.0	95.5	52.2	69.4
23 HIGH	95.7	106.9	85.9	103.3	56.7	72.5	94.2	102.8	84.0	96.2	53.0	73.1
32 HIGH	95.3	107.0	86.2	103.3	56.5	71.8	94.2	103.0	84.1	96.1	53.3	71.4
35 HIGH	95.6	107.6	86.9	104.1	57.6	72.9	94.4	103.4	84.6	96.9	53.9	72.8
40 HIGH	95.7	107.3	85.9	103.0	56.1	70.6	94.4	103.2	84.3	97.3	54.3	72.8
46 HIGH	95.9	108.1	86.4	103.6	56.1	70.4	95.2	103.4	85.2	99.3	55.6	75.7
49 HIGH	96.0	107.4	86.4	103.2	55.7	70.7	94.4	104.2	85.6	99.5	54.8	74.5
AVERAGE	96.0	108.2	86.8	104.1	57.0	72.6	94.5	103.2	84.9	98.0	54.3	73.5

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	92.5	103.3	85.6	98.7	53.6	68.2	92.9	102.6	83.3	100.3	52.6	69.2
7 LOW	93.5	105.1	87.1	100.8	55.1	69.8	93.5	103.7	84.2	101.2	52.7	68.0
37 LOW	91.9	96.6	78.2	91.2	49.7	62.0	91.4	96.6	76.1	93.6	49.2	61.7
44 LOW	91.9	96.0	78.7	91.4	49.5	62.9	91.5	95.6	75.6	93.1	48.7	61.8
55 LOW	91.9	97.6	81.0	93.5	50.6	64.0	91.7	96.4	76.9	93.8	48.6	61.8
AVERAGE	92.4	101.3	83.6	96.9	52.3	66.5	92.3	100.4	80.8	97.9	50.8	65.8

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	94.6	104.1	85.1	102.1	55.7	71.4	93.4	100.6	83.4	95.7	51.2	65.4
7 LOW	94.3	104.7	86.2	102.4	55.4	71.0	94.0	101.9	84.8	96.7	52.7	68.6
37 LOW	92.9	98.2	79.8	96.3	52.1	65.8	92.9	95.7	74.8	87.8	49.2	61.4
44 LOW	92.1	98.0	79.3	95.4	51.1	64.3	92.7	95.8	74.9	88.1	48.8	63.9
55 LOW	92.7	98.3	79.9	95.9	50.9	64.8	92.9	96.9	76.5	89.7	49.3	61.8
AVERAGE	93.8	102.7	84.0	100.6	54.4	69.7	93.3	99.6	82.0	94.3	50.9	65.6

MUNSTER INDOOR BLAST DATA TEST# 06.2

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	96.5	109.5	89.5	104.0	56.7	74.3	96.6	110.0	88.7	104.1	57.3	75.6
20 HIGH	97.0	110.1	90.6	104.6	57.3	74.8	96.8	110.6	89.5	105.0	58.3	75.8
26 HIGH	96.7	109.2	90.0	104.0	57.2	74.2	97.1	110.6	89.6	105.3	58.1	76.0
29 HIGH	96.5	110.1	90.3	104.6	57.1	74.5	96.7	110.3	89.2	104.9	57.9	76.1
32 HIGH	96.2	108.8	89.5	103.0	56.3	74.5	96.6	109.9	88.9	104.4	57.1	74.0
33 HIGH	96.0	108.5	88.9	102.1	55.7	71.7	96.3	109.1	88.2	103.0	56.3	73.5
40 HIGH	96.4	109.0	90.0	103.7	57.0	74.6	96.6	109.7	88.9	104.2	57.1	74.8
44 HIGH	96.7	109.5	90.5	104.2	57.2	73.7	96.7	109.8	88.9	104.3	57.4	74.6
49 HIGH	96.6	108.9	90.3	103.9	57.3	73.8	96.9	109.7	88.9	103.9	58.0	76.2
50 HIGH	96.6	109.2	90.0	103.8	57.0	73.3	96.9	109.3	88.6	103.2	57.6	76.4
AVERAGE	96.5	109.3	90.0	103.8	56.9	74.0	96.7	109.9	89.0	104.3	57.5	75.4

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	97.8	110.9	87.3	104.7	57.1	74.4	96.5	105.9	88.6	101.8	56.8	76.5
20 HIGH	97.8	111.6	88.2	105.8	58.6	76.9	96.5	106.5	89.3	102.7	58.3	77.1
26 HIGH	97.7	111.5	88.4	106.2	58.6	75.2	96.1	106.4	88.8	102.8	57.5	77.8
29 HIGH	97.5	111.2	88.1	105.7	58.5	76.2	96.5	106.9	89.0	102.9	58.0	77.9
32 HIGH	97.7	110.9	87.6	105.4	58.1	74.8	95.9	106.1	87.8	101.9	57.1	77.3
33 HIGH	97.4	110.1	86.6	103.9	57.4	74.2	95.4	105.5	86.9	100.4	55.9	77.1
40 HIGH	98.0	110.8	87.6	105.0	57.9	75.4	95.8	106.0	87.8	102.1	57.3	76.6
44 HIGH	97.7	110.8	87.6	105.1	57.9	75.0	96.5	106.4	88.7	102.1	57.4	77.6
49 HIGH	98.0	110.8	87.4	104.7	57.5	73.4	95.7	106.4	88.4	101.8	57.4	76.8
50 HIGH	97.4	110.4	86.6	103.9	56.9	74.9	96.1	106.2	87.9	100.9	57.3	76.8
AVERAGE	97.7	110.9	87.6	105.1	57.9	75.1	96.1	106.2	88.4	102.0	57.3	77.2

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	93.3	103.5	85.2	99.1	53.5	68.2	93.0	102.1	82.1	99.5	52.3	67.1
17 LOW	92.9	103.3	84.7	98.4	52.9	67.1	93.0	101.8	81.7	99.2	52.0	66.2
19 LOW	93.2	104.3	85.9	99.8	54.1	68.7	93.0	102.7	83.1	100.3	52.9	67.1
21 LOW	93.1	103.9	85.8	100.2	54.2	69.2	93.8	102.7	83.5	100.7	53.7	68.1
52 LOW	92.8	103.3	85.2	98.8	53.2	68.0	93.0	101.3	83.0	98.4	52.1	64.6
AVERAGE	93.1	103.7	85.4	99.3	53.6	68.3	93.2	102.2	82.7	99.7	52.6	66.8

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	94.5	103.4	84.3	101.2	55.0	70.5	93.5	99.3	82.4	94.7	50.8	64.3
17 LOW	94.0	102.9	83.7	100.7	54.2	69.7	94.2	98.7	81.6	94.3	50.9	70.2
19 LOW	94.0	103.6	85.0	101.7	55.0	70.4	93.1	100.1	83.0	94.9	50.9	65.4
21 LOW	94.2	103.7	85.7	102.3	55.9	71.3	93.8	99.9	82.5	94.7	51.3	64.9
52 LOW	93.2	102.2	83.9	99.8	53.2	72.3	93.2	100.0	81.6	94.2	51.3	65.6
AVERAGE	94.2	103.4	84.7	101.5	55.1	70.5	93.6	99.5	82.4	94.7	50.9	66.5

MUNSTER INDOOR BLAST DATA TEST# 08.1

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	103.8	114.6	88.6	102.5	47.2	75.2
14 HIGH	100.9	113.6	86.7	102.6	48.9	77.5
16 HIGH	100.5	112.3	86.1	101.0	47.1	76.6
19 HIGH	102.1	114.6	88.7	103.7	47.3	75.5
23 HIGH	102.3	115.6	88.5	103.9	47.3	76.1
32 HIGH	100.1	114.1	87.3	102.0	47.9	76.1
35 HIGH	101.6	114.7	88.0	102.6	45.5	76.1
40 HIGH	102.6	115.2	89.5	105.3	49.3	76.2
45 HIGH						
49 HIGH	100.9	114.4	88.4	103.4	47.9	77.5
AVERAGE	101.8	114.4	88.1	103.2	47.7	76.4

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	106.0	116.8	91.3	101.9	46.7	7[illegible].5
14 HIGH	102.6	114.7	88.2	100.3	48.4	72.4
16 HIGH	102.2	114.0	87.6	98.9	46.7	73.1
19 HIGH	103.7	116.2	90.0	102.0	47.5	70.4
23 HIGH	104.1	116.6	90.3	102.6	47.7	74.3
32 HIGH	101.9	115.0	88.8	102.8	45.7	73.6
35 HIGH	103.5	116.4	89.9	102.1	48.0	74.3
40 HIGH	104.4	117.0	91.1	103.2	49.9	73.4
45 HIGH						
49 HIGH	102.7	115.4	89.8	104.1	47.1	72.4
AVERAGE	103.6	115.9	89.8	102.2	47.7	73.2

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	99.1	111.7	84.7	99.0	46.6	62.5
14 HIGH	99.3	111.8	85.6	99.3	50.1	65.2
16 HIGH	98.7	110.9	84.5	98.6	47.5	59.1
19 HIGH	100.8	114.0	87.8	101.6	49.2	76.0
23 HIGH	101.0	114.3	87.7	101.8	47.9	76.4
32 HIGH	99.0	112.6	86.6	102.4	47.4	62.7
35 HIGH	100.5	113.7	87.1	100.5	45.7	63.2
40 HIGH	101.5	114.8	88.9	103.1	53.0	78.0
45 HIGH						
49 HIGH	99.9	112.9	87.8	103.8	49.2	65.0
AVERAGE	100.1	113.1	87.0	101.5	49.1	72.5

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	102.9	113.9	86.3	97.4	44.2	65.1
14 HIGH	101.4	112.0	84.3	94.8	59.9	84.7
16 HIGH	101.2	111.9	84.0	93.5	43.8	61.1
19 HIGH	102.2	113.3	85.6	96.5	44.7	57.3
23 HIGH	103.2	114.0	86.8	96.8	44.4	71.3
32 HIGH	100.8	112.1	84.8	96.9	46.0	59.5
35 HIGH	102.5	113.5	86.2	96.5	43.6	64.3
40 HIGH	103.5	114.5	87.8	98.4	47.2	72.1
45 HIGH						
49 HIGH	101.8	113.1	86.8	99.4	46.4	62.0
AVERAGE	102.3	113.2	86.0	97.0	51.4	75.7

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	93.1	103.0	78.1	91.5	44.1	60.3
7 LOW	92.2	102.9	78.6	94.0	42.9	60.3
37 LOW	93.2	105.8	80.7	96.4	44.3	60.5
44 LOW	91.9	103.9	77.9	91.3	41.9	59.6
55 LOW	94.1	107.9	81.8	96.3	44.6	59.6
AVERAGE	93.0	105.2	79.7	94.4	43.7	60.1

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	95.0	105.1	80.0	90.0	42.9	58.3
7 LOW	95.1	105.3	81.0	91.6	41.9	54.9
37 LOW	94.8	107.3	81.7	93.3	44.2	60.1
44 LOW	94.4	105.2	79.9	91.0	41.4	62.8
55 LOW	96.2	108.1	82.9	96.0	42.3	62.1
AVERAGE	95.1	106.4	81.2	92.9	42.7	60.4

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW						
7 LOW						
37 LOW	92.4	104.8	79.8	93.7	46.6	61.2
44 LOW	91.9	101.7	76.5	89.4	43.4	61.6
55 LOW	93.8	105.6	80.5	95.7	44.7	57.2
AVERAGE	92.2	103.5	78.5	92.1	45.3	61.4

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	92.1	103.4	75.4	86.3	42.6	62.6
7 LOW	91.6	102.3	75.7	86.9	42.9	61.3
37 LOW	94.4	105.6	79.0	89.9	42.8	56.1
44 LOW	93.4	104.2	77.4	87.6	42.5	64.7
55 LOW	94.3	105.3	79.8	92.4	44.1	61.3
AVERAGE	92.8	103.9	76.8	87.6	42.7	62.2

MUNSTER INDOOR BLAST DATA TEST# 06.2

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	102.8	115.2	89.5	105.8	51.3	74.3
20 HIGH	101.6	113.8	87.8	103.1	47.2	75.4
26 HIGH	101.8	114.2	88.1	103.7	47.5	75.8
29 HIGH	102.3	114.4	88.6	104.1	48.4	74.5
32 HIGH	102.9	114.9	89.3	104.6	49.9	74.9
33 HIGH	102.1	114.8	89.2	105.1	50.3	75.3
40 HIGH	101.9	114.3	88.0	103.6	48.4	75.4
44 HIGH	103.1	116.7	89.2	102.6	48.9	76.5
49 HIGH	102.5	114.5	89.2	104.2	49.3	76.3
50 HIGH	101.7	113.6	87.3	102.3	45.6	74.9
AVERAGE	102.3	114.7	88.7	104.0	49.0	75.4

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	105.0	116.9	90.8	101.9	47.6	71.2
20 HIGH	104.0	115.4	89.6	102.3	46.7	70.1
26 HIGH	104.1	115.7	90.0	102.6	47.5	73.9
29 HIGH	104.7	116.3	90.3	103.2	48.0	68.5
32 HIGH	104.9	116.6	90.9	103.2	49.2	71.8
33 HIGH	104.2	116.5	90.7	104.3	48.9	72.6
40 HIGH	103.8	115.8	89.8	103.2	48.8	74.4
44 HIGH	105.6	118.1	91.6	103.7	46.3	74.3
49 HIGH	104.6	116.7	90.8	103.6	48.2	72.5
50 HIGH	103.9	115.5	89.4	101.6	45.7	74.3
AVERAGE	104.5	116.4	90.4	103.0	47.8	72.7

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
HIGH	102.4	113.3	86.2	96.8	45.3	64.7
20 HIGH	101.6	112.8	85.6	96.8	45.6	58.9
26 HIGH	101.6	112.5	85.4	96.0	46.7	69.2
29 HIGH	101.7	112.9	85.8	98.1	45.2	63.3
32 HIGH	102.6	113.7	86.5	97.8	44.5	62.9
33 HIGH	102.0	113.5	86.5	98.3	46.5	63.5
40 HIGH	101.9	113.0	85.7	96.8	45.0	64.7
44 HIGH	102.9	113.9	86.9	97.9	44.5	71.0
49 HIGH	102.6	113.9	87.2	98.9	46 5	71.1
50 HIGH	102.1	113.1	85.8	96.6	44.2	61.5
AVERAGE	102.2	113.3	86.2	97.5	45.5	66.8

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
HIGH	99.4	112.8	86.0	99.9	48.4	62.7
20 HIGH	98.7	110.5	84.7	100.2	47.1	70.6
26 HIGH	98.9	111.1	85.5	100.3	48.6	62.7
29 HIGH	98.9	111.6	85.3	100.9	49.0	70.4
32 HIGH	99.7	112.5	86.3	101.6	49.6	65.5
33 HIGH	99.4	112.6	86.7	102.7	51.1	68.1
40 HIGH	99.1	111.5	85.5	101.6	50.2	64.6
44 HIGH	100.1	114.0	86.2	100.6	46.7	76.6
49 HIGH	99.7	112.4	86.6	101.7	48.4	74.4
50 HIGH	98.8	110.5	84.3	99.5	46.0	61.5
AVERAGE	99.3	112.1	85.8	101.0	48.8	70.6

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	92.9	105.2	80.3	95.4	44.3	60.8
17 LOW	92.0	104.2	77.3	91.7	41.1	61.7
19 LOW	91.0	103.5	78.5	94.9	45.5	60.8
21 LOW	92.6	104.7	80.3	95.6	43.7	56.8
52 LOW	92.1	104.7	78.9	94.6	44.3	63.5
AVERAGE	92.2	104.5	79.2	94.6	44.0	61.2

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	95.9	106.5	82.0	91.8	43.1	56.2
17 LOW	95.1	105.3	80.3	91.0	41.0	61.5
19 LOW	93.8	104.4	79.7	92.3	41.4	62.0
21 LOW	95.4	106.0	81.5	92.9	43.4	61.1
52 LOW	95.3	105.7	81.0	93.6	42.9	62.6
AVERAGE	95.2	105.6	81.0	92.4	42.5	61.2

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	92.4	103.6	76.9	87.8	42.7	61.7
17 LOW	90.7	101.7	73.9	85.5	40.9	61.7
19 LOW	91.4	102.5	75.2	86.2	42.1	59.2
21 LOW	92.0	102.8	76.6	87.4	42.6	54.8
52 LOW	92.9	103.8	77.0	88.0	45.5	64.0
AVERAGE	91.8	102.9	76.0	87.0	42.3	60.5

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	89.3	102.3	76.8	89.6	43.6	59.0
17 LOW	88.4	100.9	73.8	88.0	42.2	66.4
19 LOW	88.4	99.9	75.5	90.5	45.9	68.7
21 LOW	89.3	101.4	77.2	91.1	44.9	61.5
52 LOW	89.3	101.1	76.1	90.9	43.8	62.6
AVERAGE	89.0	101.5	76.2	89.9	44.2	64.7

MUNSTER INDOOR BLAST DATA TEST# 07.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH							107.2	119.2	92.6	104.7	48.7	71.6
14 HIGH							109.3	120.9	94.7	106.8	51.1	71.7
16 HIGH							108.3	119.3	93.3	104.6	50.0	71.2
19 HIGH							108.6	120.0	93.2	104.8	49.2	71.1
23 HIGH							106.7	118.2	91.5	102.8	48.5	71.1
32 HIGH												
35 HIGH							107.9	119.0	92.9	104.9	48.4	72.0
40 HIGH							107.6	119.7	93.1	105.3	50.8	70.8
45 HIGH							108.5	121.2	94.4	106.5	67.9	94.7
49 HIGH							105.9	117.6	90.4	101.3	47.8	69.9
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	107.4	119.1	92.6	104.4	58.4	84.9

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	102.0	115.3	88.1	102.8	47.5	76.0	104.9	115.6	88.2	98.1	44.8	72.7
14 HIGH	103.9	117.2	90.1	104.9	49.4	72.9	106.8	117.5	90.4	100.8	45.9	64.6
16 HIGH	102.7	115.3	87.8	101.5	48.6	77.3	105.8	116.5	89.2	99.5	45.7	71.2
19 HIGH	103.3	115.9	87.2	99.9	46.8	77.0	106.6	117.2	89.6	99.2	45.0	72.0
23 HIGH	101.3	113.7	85.6	99.5	44.9	63.5	104.9	115.6	88.0	97.5	43.4	72.1
32 HIGH												
35 HIGH	102.5	114.1	87.9	103.5	48.7	72.4	105.7	116.4	88.9	99.0	49.5	72.5
40 HIGH	102.2	115.1	87.9	102.1	48.2	76.1	105.3	116.1	88.9	98.9	45.7	72.6
45 HIGH	104.2	117.0	89.9	104.2	58.4	83.8	106.9	118.1	90.6	100.6	46.5	66.2
49 HIGH	101.6	113.1	85.0	98.9	43.5	59.0	104.7	115.4	87.4	97.9	43.5	71.4
AVERAGE	102.3	114.9	87.5	101.9	50.6	76.7	105.4	116.1	88.7	98.7	45.5	70.8

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW							99.5	110.6	84.6	96.2	42.5	61.9
7 LOW												
37 LOW							98.1	109.1	83.3	93.2	45.7	69.1
44 LOW							100.1	111.2	85.8	96.8	44.5	65.8
55 LOW							96.7	108.3	82.2	93.7	42.8	61.6
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	98.8	110.0	84.2	95.2	44.1	65.7

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	94.0	106.4	79.4	94.5	42.4	58.7	98.1	108.8	81.7	92.2	43.2	63.8
7 LOW												
37 LOW	92.6	103.9	78.1	90.7	43.3	62.6	96.5	107.3	80.4	90.2	43.6	63.0
44 LOW	94.3	106.6	80.8	94.9	44.7	61.1	98.2	108.9	82.3	93.6	42.9	61.8
55 LOW	91.9	104.2	77.6	92.1	43.0	56.3	96.0	107.0	80.0	91.8	45.2	64.1
AVERAGE	92.4	104.5	78.3	92.5	42.3	59.8	96.4	107.1	80.3	91.0	42.0	61.7

MUNSTER INDOOR BLAST DATA TEST# 07.2

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH							106.3	119.0	92.6	105.0	47.9	70.5
20 HIGH							107.9	120.8	94.1	106.5	49.7	71.9
26 HIGH							106.1	118.5	92.1	104.4	46.1	70.2
29 HIGH							105.0	117.9	91.1	104.0	48.1	75.5
32 HIGH												
33 HIGH							105.1	117.3	90.1	101.9	45.4	69.9
40 HIGH							103.6	115.8	89.9	103.5	45.2	70.5
44 HIGH							107.7	120.2	94.1	107.4	50.3	72.8
49 HIGH							107.9	120.7	94.1	107.0	51.8	72.6
50 HIGH							107.3	120.1	93.5	105.8	47.9	70.5
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	106.5	119.2	92.7	105.4	48.6	72.0

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	102.4	115.8	88.8	103.6	48.2	73.1	105.2	116.5	88.7	99.4	44.9	71.1
20 HIGH	104.4	117.7	90.4	104.5	50.0	73.0	106.9	118.1	90.2	100.5	46.9	65.6
26 HIGH	102.0	115.1	87.9	101.6	46.7	76.1	105.1	116.2	88.7	99.4	45.2	71.4
29 HIGH	101.2	115.1	87.2	101.3	47.8	75.4	104.3	115.5	87.9	98.9	48.3	72.2
32 HIGH												
33 HIGH	101.9	114.3	85.8	98.9	44.7	76.3	105.0	116.3	88.0	98.5	43.9	71.7
40 HIGH	100.5	112.3	86.6	101.6	44.6	58.7	103.3	114.5	86.5	97.3	43.4	72.3
44 HIGH	104.0	117.0	90.5	105.8	50.0	73.1	106.8	118.2	90.5	101.0	46.2	64.8
49 HIGH	104.7	117.5	90.4	105.1	46.7	73.2	107.6	118.7	90.9	101.1	44.4	64.8
50 HIGH	103.3	116.7	89.4	103.7	47.4	72.1	106.5	117.8	90.2	101.0	45.0	66.3
AVERAGE	102.9	116.0	88.9	103.4	47.7	73.8	105.8	117.1	89.3	99.8	45.6	70.0

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW												
17 LOW							96.5	109.0	84.4	99.5	46.6	63.9
19 LOW							98.4	111.3	85.2	98.7	46.3	60.0
21 LOW							95.2	107.6	82.0	94.0	45.1	63.7
52 LOW							97.2	109.8	84.2	97.3	42.9	62.9
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	97.0	109.6	84.1	97.8	45.4	62.9

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW												
17 LOW	92.7	106.4	82.1	98.3	46.4	61.1	95.9	107.2	81.4	94.3	44.2	56.6
19 LOW	94.1	108.3	81.8	96.8	47.1	64.6	97.6	108.2	82.3	92.2	44.4	62.9
21 LOW	91.6	104.2	79.4	92.1	47.0	55.9	95.0	105.9	79.0	89.4	43.0	58.7
52 LOW	93.5	106.7	81.0	96.0	45.1	62.0	96.8	108.3	81.5	93.1	42.5	56.2
AVERAGE	91.7	105.4	80.0	95.2	45.6	60.6	95.1	106.0	79.9	91.2	42.7	59.0

MUNSTER INDOOR BLAST DATA TEST# 08.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	102.6	115.2	88.0	103.2	46.7	73.7						
14 HIGH	102.1	114.5	88.7	104.8	48.0	73.9						
16 HIGH	103.9	116.2	90.4	106.3	50.2	74.8						
19 HIGH	102.4	114.6	87.5	102.8	46.3	74.1						
23 HIGH	102.6	114.5	87.8	103.4	47.3	73.4						
32 HIGH	102.8	114.5	86.8	102.0	46.8	74.7						
35 HIGH	102.3	115.4	88.7	105.1	48.4	73.6						
40 HIGH	102.5	115.3	88.9	105.0	48.3	73.4						
46 HIGH	103.8	117.2	90.8	106.6	50.6	73.9						
49 HIGH	103.4	115.7	89.4	105.4	48.7	73.7						
AVERAGE	102.9	115.4	88.9	104.7	48.4	73.9	0.0	0.0	0.0	0.0	0.0	0.0

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	103.1	116.6	89.2	102.8	48.0	71.7	105.7	116.5	89.1	99.4	44.2	72.1
14 HIGH	102.9	116.1	89.9	104.7	51.1	75.2	104.9	116.5	88.9	99.3	48.7	72.9
16 HIGH	104.9	117.8	91.8	106.8	52.1	76.3	106.8	118.3	90.7	101.2	46.6	66.1
19 HIGH	103.0	116.2	89.2	102.6	49.5	72.5	105.3	116.5	88.8	99.0	44.7	72.2
23 HIGH	103.2	115.8	89.0	102.3	48.4	71.5	105.7	116.8	89.2	100.2	45.1	72.0
32 HIGH	102.8	114.4	87.6	101.1	49.5	75.7	105.7	116.5	88.6	98.5	43.7	71.5
35 HIGH	103.2	116.7	90.3	104.9	49.1	71.5	105.2	116.7	89.2	99.7	45.0	71.7
40 HIGH	103.5	116.6	90.6	106.3	52.6	74.5	105.5	117.1	89.4	100.6	45.7	72.1
46 HIGH	105.[illegible]	118.8	92.5	107.6	54.2	77.4	107.1	118.8	91.3	103.2	49.2	68.5
49 HIGH	104.2	117.2	90.9	106.3	49.1	75.6	106.6	117.9	90.3	101.4	46.3	67.1
AVERAGE	103.7	116.8	90.3	105.0	50.8	74.7	105.9	117.2	89.6	100.5	46.3	71.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	94.9	107.3	81.2	95.9	42.1	56.9						
7 LOW	94.4	107.7	82.3	97.4	44.1	63.9						
37 LOW	95.1	107.0	82.2	97.9	44.8	62.4						
44 LOW	94.9	106.1	81.8	96.7	43.2	58.7						
55 LOW	94.7	107.9	82.6	97.3	44.4	61.9						
AVERAGE	94.8	107.2	82.0	97.1	43.8	61.4	0.0	0.0	0.0	0.0	0.0	0.0

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	94.6	108.6	82.4	96.7	44.6	63.1	97.4	108.2	81.8	92.1	42.0	57.0
7 LOW	94.8	108.9	83.3	97.4	46.7	61.3	96.2	107.6	81.1	91.8	42.3	61.4
37 LOW	95.0	109.1	83.7	98.4	51.0	69.8	97.5	109.0	82.2	93.6	44.1	61.2
44 LOW	94.3	107.1	82.3	97.7	46.4	61.5	97.4	108.8	82.2	93.6	44.0	63.6
55 LOW	95.0	108.7	83.8	97.7	47.5	62.4	97.2	108.9	82.3	93.9	44.4	60.2
AVERAGE	94.7	108.5	82.9	97.4	47.4	65.2	97.2	108.4	81.8	92.7	43.0	60.8

MUNSTER INDOOR BLAST DATA   TEST# 08.2

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	104.6	116.8	90.2	106.1	49.6	73.3						
20 HIGH	105.0	117.9	91.5	107.2	50.4	73.4						
26 HIGH	104.5	117.3	90.5	106.8	51.7	72.4						
29 HIGH	104.4	116.7	90.4	106.4	51.6	71.4						
32 HIGH	104.8	117.2	90.8	106.6	48.9	72.6						
33 HIGH	105.1	117.9	91.0	107.2	49.1	72.7						
40 HIGH	104.5	116.9	91.0	107.4	51.8	72.6						
44 HIGH	104.5	117.1	90.9	107.1	50.3	73.9						
49 HIGH	105.5	118.2	92.1	108.2	52.2	75.4						
50 HIGH	105.5	118.2	92.1	108.0	51.9	75.1						
AVERAGE	104.9	117.5	91.1	107.1	50.9	73.4	0.0	0.0	0.0	0.0	0.0	0.0

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	103.0	115.5	89.3	104.6	50.5	68.5	105.2	116.2	88.7	99.4	45.9	71.5
20 HIGH	103.8	117.0	90.8	106.1	52.0	76.0	105.7	117.3	89.7	100.6	46.9	72.3
26 HIGH	103.1	116.0	90.1	106.0	55.8	76.6	105.4	116.5	89.0	99.0	46.2	72.7
29 HIGH	103.1	115.7	90.0	105.5	55.3	77.3	105.3	116.6	89.2	99.6	46.9	72.7
32 HIGH	103.6	116.3	90.3	106.0	50.2	75.5	105.7	117.1	89.6	100.7	45.9	72.8
33 HIGH	103.9	116.7	90.7	105.7	53.0	76.0	106.1	117.5	89.9	100.4	45.9	71.8
40 HIGH	103.5	116.8	91.0	107.1	55.8	77.1	105.6	116.9	89.7	100.9	47.7	72.7
44 HIGH	103.4	116.8	90.7	106.3	54.3	77.2	105.6	116.9	89.7	100.3	46.6	72.5
49 HIGH	104.7	118.1	92.0	107.7	54.3	76.4	106.5	118.2	90.8	102.6	48.4	69.4
50 HIGH	104.7	118.0	92.1	108.0	54.5	76.9	106.7	118.3	91.0	102.9	48.6	68.8
AVERAGE	103.7	116.8	90.8	106.4	54.0	76.2	105.8	117.2	89.8	100.8	47.0	71.9

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	96.0	108.4	83.7	99.7	47.8	63.3						
17 LOW	95.3	107.5	82.5	98.7	45.7	65.4						
19 LOW	95.8	108.6	83.8	99.9	49.0	64.1						
21 LOW	95.9	109.8	84.2	98.3	45.3	61.3						
52 LOW	95.3	109.0	84.2	99.7	48.2	65.4						
AVERAGE	95.7	108.7	83.7	99.3	47.4	64.2	0.0	0.0	0.0	0.0	0.0	0.0

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	94.3	107.9	82.9	97.2	49.2	65.8	97.2	108.7	82.0	93.3	44.1	63.4
17 LOW	93.8	106.8	81.5	96.0	47.9	63.5	96.4	107.5	81.1	91.8	43.3	59.3
19 LOW	94.2	107.8	83.0	97.7	51.2	67.2	97.4	108.6	82.2	92.2	44.4	65.2
21 LOW	94.6	108.1	83.2	99.3	46.9	66.7	96.7	108.7	82.3	95.1	44.0	54.9
52 LOW	94.3	107.7	83.4	97.1	49.2	64.3	96.8	108.7	82.7	95.0	44.8	57.4
AVERAGE	94.2	107.7	82.7	97.6	49.1	66.0	97.0	108.5	81.9	93.3	44.0	62.5

MUNSTER INDOOR BLAST DATA TEST# 09.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	107.2	120.0	93.6	109.6	51.3	76.0	108.9	121.4	95.0	107.5	51.6	71.8
14 HIGH	105.3	117.7	91.3	107.7	51.3	75.9	106.8	119.3	92.5	105.0	51.1	73.2
16 HIGH	106.4	119.6	93.9	110.2	56.1	77.0	108.1	120.8	94.9	108.4	56.0	72.6
19 HIGH	106.0	119.1	93.6	109.8	55.8	77.7	107.8	120.4	94.4	108.3	55.1	73.0
23 HIGH	105.9	119.1	93.3	108.8	52.2	75.8	107.7	120.2	94.3	107.3	51.1	70.8
32 HIGH	104.6	117.5	91.4	107.8	52.2	75.7	106.2	118.9	92.4	105.7	50.3	72.4
35 HIGH	106.3	119.1	92.5	108.5	50.9	74.9	108.2	120.8	94.0	107.3	48.2	71.5
40 HIGH	106.5	119.2	92.1	107.7	49.1	74.5	108.1	120.8	93.7	106.5	49.9	72.5
45 HIGH	106.2	119.5	93.2	109.6	55.6	77.4	108.2	121.1	94.9	108.1	54.7	71.5
49 HIGH	104.1	116.8	89.5	104.7	49.1	73.8	105.8	118.3	91.3	103.8	49.2	71.3
AVERAGE	105.9	118.9	92.6	108.7	53.1	76.0	107.7	120.3	93.9	107.0	52.5	72.1

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	105.8	118.9	92.2	106.8	51.4	74.6						
14 HIGH	103.9	116.2	89.9	104.2	52.8	76.3						
16 HIGH	105.1	118.7	93.0	108.2	58.3	75.0						
19 HIGH	104.7	118.3	92.5	108.1	57.8	75.1						
23 HIGH	104.6	117.8	92.0	106.5	53.1	74.0						
32 HIGH	103.1	116.1	90.1	104.9	52.8	75.8						
35 HIGH	105.1	118.2	91.5	106.2	49.2	73.9						
40 HIGH	105.3	118.2	91.0	105.8	48.7	74.7						
45 HIGH	105.3	119.0	92.7	107.2	55.2	74.7						
49 HIGH	102.7	115.1	88.1	102.5	46.9	72.0						
AVERAGE	104.7	117.8	91.5	106.3	54.0	74.7	0.0	0.0	0.0	0.0	0.0	0.0

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	98.3	113.5	88.2	103.9	52.1	78.3	99.6	112.3	87.5	103.4	50.2	69.1
7 LOW	97.4	110.3	84.4	99.4	44.1	60.3	99.0	111.0	85.0	98.2	43.1	59.4
37 LOW	97.5	110.5	84.6	99.6	46.1	62.1	99.2	111.6	85.5	98.4	46.1	60.3
44 LOW	97.1	111.0	85.4	100.2	46.5	62.1	99.1	111.9	86.1	100.0	46.0	63.0
55 LOW	95.3	109.3	82.5	97.0	44.5	62.6	97.2	110.2	83.6	96.9	43.0	63.1
AVERAGE	97.2	111.2	85.4	100.6	47.8	71.7	98.9	111.5	85.7	100.0	46.5	64.5

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	96.5	111.6	86.7	103.0	52.4	70.5						
7 LOW	95.4	108.4	82.7	97.2	42.9	63.4						
37 LOW	95.7	109.5	83.5	98.2	47.5	62.2						
44 LOW	95.6	109.4	84.4	99.8	48.4	64.0						
55 LOW	94.0	108.0	81.5	96.3	45.4	62.6						
AVERAGE	96.0	110.3	85.1	100.9	49.9	67.6	0.0	0.0	0.0	0.0	0.0	0.0

MUNSTER INDOOR BLAST DATA TEST# 09.2

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	106.0	119.1	92.9	108.5	50.8	75.2	107.9	120.2	93.8	107.6	49.8	72.2
20 HIGH	105.6	118.4	91.7	107.9	52.3	75.7	107.5	119.9	93.0	106.0	53.6	73.4
26 HIGH	106.6	119.5	93.5	109.6	52.6	76.3	108.3	120.8	94.4	108.4	53.0	72.0
29 HIGH	105.9	119.0	92.2	108.7	53.2	75.8	108.0	120.2	93.5	107.0	52.2	73.2
32 HIGH	107.2	120.7	94.1	109.9	52.7	76.0	109.1	121.8	95.3	109.3	54.2	75.4
33 HIGH	107.1	120.0	94.1	110.0	53.7	76.5	109.1	121.7	95.4	108.9	55.7	76.8
40 HIGH	106.5	120.2	94.4	110.0	54.4	75.6	108.4	121.1	95.1	109.3	53.9	70.6
44 HIGH	106.5	119.7	93.3	109.5	53.0	76.4	108.3	120.6	94.3	108.7	52.2	72.1
49 HIGH	105.5	118.4	90.6	105.7	47.9	74.0	107.7	120.1	92.6	104.4	47.4	72.0
50 HIGH	105.4	118.4	92.4	108.4	54.0	77.0	107.4	119.9	93.5	107.5	51.6	72.7
AVERAGE	106.3	119.4	93.1	109.0	52.8	75.9	108.2	120.7	94.2	107.9	52.9	73.4

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	105.1	118.1	91.7	106.6	50.6	74.8						
20 HIGH	104.7	117.4	90.9	105.3	55.2	75.6						
26 HIGH	105.7	118.8	92.4	107.6	54.4	74.5						
29 HIGH	105.3	117.9	91.5	106.3	53.7	75.5						
32 HIGH	106.7	120.0	93.4	108.7	54.3	73.9						
33 HIGH	106.5	119.9	93.5	108.2	57.0	73.6						
40 HIGH	105.9	119.5	93.6	108.7	55.7	73.5						
44 HIGH	105.4	118.4	92.3	108.0	54.0	74.5						
49 HIGH	104.4	117.2	89.5	103.4	47.4	73.1						
50 HIGH	104.3	117.5	91.4	106.5	53.3	74.9						
AVERAGE	105.5	118.6	92.2	107.2	54.2	74.5	0.0	0.0	0.0	0.0	0.0	0.0

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	96.6	110.3	85.1	100.2	48.0	64.3	98.5	110.6	84.8	98.0	46.7	62.9
17 LOW	96.5	109.9	84.3	100.3	45.7	62.5	98.8	110.3	84.7	97.5	45.0	61.5
19 LOW												
21 LOW	96.4	109.7	84.5	100.3	48.7	65.8	98.5	110.0	84.8	97.5	47.7	63.4
52 LOW	95.6	109.0	84.0	98.7	47.5	64.2	97.9	109.4	84.3	99.1	45.4	62.8
AVERAGE	96.3	109.8	84.5	99.9	47.6	64.4	98.4	110.1	84.7	98.1	46.3	62.7

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	94.9	108.6	83.1	97.1	47.5	64.3						
17 LOW	95.2	108.3	82.7	96.7	45.6	63.5						
19 LOW												
21 LOW	95.1	108.1	83.2	97.2	48.6	65.4						
52 LOW	94.4	107.7	82.6	99.0	46.3	61.6						
AVERAGE	93.7	107.2	81.9	95.9	46.6	63.4	0.0	0.0	0.0	0.0	0.0	0.0

MUNSTER INDOOR BLAST DATA TEST# 10.1

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH	108.7	123.1	98.3	114.3	64.0	89.4	110.0	123.8	98.1	112.1	88.3	118.8
14 HIGH	108.8	123.1	98.3	114.2	64.6	89.9	110.2	123.6	98.3	112.0	87.6	118.8
16 HIGH	109.1	123.5	98.5	114.4	63.7	89.7	110.4	124.1	98.4	111.8	87.4	118.8
19 HIGH	108.9	123.6	98.5	114.3	64.3	90.3	110.4	124.1	98.6	112.8	86.8	118.8
23 HIGH	108.8	122.8	98.0	113.7	63.5	88.7	110.4	123.9	98.3	112.8	88.4	118.8
32 HIGH	108.6	122.4	97.8	113.7	63.6	87.9	110.0	123.4	97.9	112.4	89.0	118.8
35 HIGH	108.8	122.9	97.6	113.5	62.2	88.5	110.4	124.1	98.2	112.5	89.6	118.8
40 HIGH	108.8	123.1	97.6	113.2	62.3	88.6	110.5	124.4	98.4	112.5	89.9	118.8
45 HIGH	109.0	123.3	98.1	114.0	65.0	89.7	110.8	124.4	98.7	112.6	87.7	118.8
49 HIGH	108.4	122.5	96.8	112.5	60.8	85.7	110.2	123.7	97.7	111.5	58.5	80.3
AVERAGE	108.8	123.0	98.0	113.8	63.6	89.0	110.3	124.0	98.3	112.3	88.0	118.3

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
8 HIGH							108.8	120.4	92.9	106.3	57.8	74.7
14 HIGH							109.2	120.8	93.2	106.7	58.2	74.7
16 HIGH							109.2	121.0	93.2	106.9	56.8	73.9
19 HIGH							109.4	121.0	93.4	107.4	58.2	75.0
23 HIGH							109.4	121.1	93.5	107.4	57.9	76.9
32 HIGH							109.2	120.8	93.2	106.5	57.4	86.2
35 HIGH							109.5	121.3	93.5	107.0	55.7	75.7
40 HIGH							109.4	121.4	93.8	107.7	57.5	77.2
45 HIGH							109.7	121.6	94.1	107.9	62.0	86.6
49 HIGH							109.5	121.3	93.6	106.1	55.5	74.2
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	109.3	121.1	93.5	107.0	58.1	80.6

	ROOM A						ROOM B					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW	99.8	116.5	91.7	108.6	58.3	78.5	101.2	115.1	90.6	107.9	56.2	74.4
7 LOW	100.2	116.8	92.4	109.1	59.5	79.4	101.5	115.5	91.1	108.7	56.9	74.6
37 LOW	100.3	117.0	91.8	108.3	57.5	79.4	102.0	115.6	91.4	108.3	56.9	73.6
44 LOW	100.0	116.7	91.6	107.8	58.5	79.1	101.9	115.4	91.2	108.3	57.0	74.6
55 LOW	100.0	116.8	91.5	108.0	59.8	78.2	102.0	115.0	91.0	107.5	55.8	74.1
AVERAGE	100.1	116.8	91.8	108.4	58.8	78.9	101.7	115.3	91.1	108.2	56.6	74.3

	ROOM C						ROOM D					
	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
3 LOW							100.1	111.2	84.6	97.3	51.3	67.2
7 LOW							100.3	111.4	85.0	97.6	52.1	68.2
37 LOW							100.6	112.3	85.7	100.0	52.3	67.9
44 LOW							100.9	111.9	85.8	100.8	53.4	71.8
55 LOW							100.9	112.1	86.0	101.4	54.2	70.8
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	100.4	111.6	85.2	98.9	52.2	68.9

MUNSTER INDOOR BLAST DATA TEST# 10.2

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH						
20 HIGH	108.4	122.0	97.6	113.6	63.0	83.8
26 HIGH	109.8	123.0	97.5	112.8	62.1	81.9
29 HIGH	109.5	122.5	97.4	112.1	60.7	80.4
32 HIGH	107.6	120.9	96.0	112.0	60.0	75.9
33 HIGH	109.4	122.8	97.6	113.5	61.7	80.2
40 HIGH	109.3	122.7	97.6	112.2	59.5	79.6
44 HIGH	107.5	120.4	95.8	111.2	60.0	77.9
49 HIGH						
50 HIGH						
AVERAGE	108.9	122.1	97.1	112.6	61.2	80.6

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	112.3	126.3	101.3	117.8	90.9	118.8
20 HIGH	107.6	122.8	97.9	114.5	65.1	86.3
26 HIGH	108.4	123.2	97.7	113.8	64.0	86.6
29 HIGH	108.3	122.6	97.5	112.6	62.4	86.7
32 HIGH	106.6	121.1	96.9	112.8	61.1	81.2
33 HIGH	108.3	122.8	98.0	113.5	64.5	86.6
40 HIGH	108.2	122.6	97.4	112.8	60.7	85.2
44 HIGH	106.9	120.5	95.9	111.3	62.2	81.9
49 HIGH	108.0	122.4	97.8	112.4	64.0	84.8
50 HIGH						
AVERAGE	108.6	123.0	98.1	113.9	81.4	109.3

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH						
20 HIGH						
26 HIGH						
29 HIGH						
32 HIGH						
33 HIGH						
40 HIGH						
44 HIGH						
49 HIGH						
50 HIGH						
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
4 HIGH	111.0	123.0	96.9	110.6	68.3	87.6
20 HIGH	105.9	117.6	92.4	105.8	64.6	82.0
26 HIGH	107.2	118.6	93.2	105.9	65.1	83.2
29 HIGH	106.9	118.4	93.2	106.3	65.8	84.9
32 HIGH	105.1	116.7	90.9	104.2	62.2	80.6
33 HIGH	106.8	118.5	93.0	106.9	66.2	85.1
40 HIGH	106.6	118.3	93.0	106.3	65.5	84.1
44 HIGH	105.6	116.4	91.4	106.3	62.4	80.5
49 HIGH						
50 HIGH						
AVERAGE	107.3	118.9	93.4	106.9	65.4	84.1

ROOM A

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	100.6	112.6	89.8	106.5	55.1	73.3
17 LOW	101.3	112.4	89.8	106.4	55.2	74.1
19 LOW	100.9	112.9	89.8	106.8	55.5	75.1
21 LOW	101.9	113.7	90.5	107.3	55.2	75.3
52 LOW						
AVERAGE	101.2	112.9	90.0	106.8	55.3	74.5

ROOM B

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	99.0	114.4	90.7	107.5	57.7	79.1
17 LOW	98.9	114.3	90.7	107.3	57.9	79.8
19 LOW	98.8	114.7	90.3	107.4	58.2	76.4
21 LOW	99.5	115.4	91.5	108.0	58.2	76.9
52 LOW						
AVERAGE	99.1	114.7	90.8	107.6	58.0	78.3

ROOM C

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW						
17 LOW						
19 LOW						
21 LOW						
52 LOW						
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0

ROOM D

	FSEL	FPEAK	CSEL	CPEAK	ASEL	APEAK
14 LOW	97.3	108.2	82.8	96.1	50.4	64.6
17 LOW	97.4	108.6	83.1	95.6	51.8	66.4
19 LOW	97.1	108.3	83.5	97.7	53.1	68.5
21 LOW	97.8	109.6	84.7	98.2	54.3	68.0
52 LOW						
AVERAGE	97.3	108.3	83.1	96.5	51.6	66.3

Appendix D: Subject Response Data by Room for Small Arms and Tracked and Wheeled Vehicles

NEAR GUN 60, 1st HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.3	−0.335	−0.335	0.0
2	5.0	100.0	100.3	−0.279	−0.279	501.6
3	10.0	100.0	100.2	−0.161	−0.161	1002.7
4	15.0	100.0	99.9	0.074	0.074	1503.0
5	47.0	90.0	85.9	4.145	4.605	4564.4
6	52.0	80.0	79.6	0.413	0.517	4978.6
7	55.0	77.0	75.2	1.846	2.398	5210.8
8	57.0	62.0	71.9	−9.940	−16.033	5357.9
9	65.0	62.0	57.5	4.529	7.305	5877.0
10	110.0	0.0	1.3	−1.283	0.000	6864.4
11	115.0	0.0	0.2	−0.206	0.000	6867.9
12	120.0	0.0	−0.4	0.424	0.000	6867.2
13	125.0	0.0	−0.8	0.772	0.000	6864.1
X@50Y	63.6					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.0					
F−stat	467.5					
Confidence	90.0					
A	−1.1	C	69.0			
A StdErr	2.7	C StdErr	2.7			
A t	−0.4	C t	25.1			
A ConfLimits	−6.1	C ConfLimits	64.0			
	3.8		74.1			
B	101.5	D	−20.6			
B StdErr	3.7	D StdErr	4.1			
B t	27.5	D t	−5.1			
B ConfLimits	94.7	D ConfLimits	−28.1			
	108.2		−13.2			

NEAR GUN 60, 1st HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.069	−0.069	0.0
2	5.0	100.0	100.1	−0.069	−0.069	500.3
3	10.0	100.0	100.1	−0.069	−0.069	1000.7
4	15.0	100.0	100.1	−0.065	−0.065	1501.0
5	47.0	90.0	91.5	−1.493	−1.659	4650.1
6	52.0	88.0	84.2	3.821	4.342	5090.6
7	55.0	84.0	78.3	5.732	6.824	5334.6
8	57.0	64.0	73.7	−9.743	−15.223	5486.7
9	65.0	55.0	52.8	2.152	3.912	5994.8
10	110.0	0.0	1.0	−1.024	0.000	6741.5
11	115.0	0.0	0.2	−0.238	0.000	6744.6
12	120.0	0.0	−0.3	0.327	0.000	6744.3
13	125.0	0.0	−0.7	0.737	0.000	6741.6
X@50Y	66.1					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.1					
F–stat	456.0					
Confidence	90.0					
A	−2.0	C	66.4			
A StdErr	2.8	C StdErr	1.9			
A t	−0.7	C t	34.5			
A ConfLimits	−7.2	C ConfLimits	62.9			
	3.1		70.0			
B	102.1	D	6.9			
B StdErr	3.7	D StdErr	1.2			
B t	27.3	D t	5.8			
B ConfLimits	95.2	D ConfLimits	4.7			
	108.9		9.1			

NEAR GUN 60, 1st HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.7	−0.733	−0.733	0.0
2	5.0	100.0	100.7	−0.733	−0.733	503.7
3	10.0	100.0	100.7	−0.733	−0.733	1007.3
4	15.0	100.0	100.7	−0.733	−0.733	1511.0
5	47.0	94.0	92.8	1.221	1.299	4699.7
6	52.0	88.0	81.2	6.756	7.677	5137.9
7	55.0	76.0	70.7	5.282	6.950	5366.4
8	57.0	48.0	62.6	−14.555	−30.323	5499.8
9	65.0	36.0	30.4	5.614	15.593	5866.3
10	110.0	0.0	0.4	−0.432	0.000	6130.5
11	115.0	0.0	0.4	−0.358	0.000	6132.4
12	120.0	0.0	0.3	−0.313	0.000	6134.1
13	125.0	0.0	0.3	−0.284	0.000	6135.6
X@50Y	59.9					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.0					
F–stat	217.6					
Confidence	90.0					
A	0.2	C	59.8			
A StdErr	3.0	C StdErr	1.1			
A t	0.1	C t	54.1			
A ConfLimits	−5.3	C ConfLimits	57.8			
	5.8		61.8			
B	100.5	D	10.2			
B StdErr	4.2	D StdErr	1.8			
B t	23.7	D t	5.5			
B ConfLimits	92.7	D ConfLimits	6.8			
	108.3		13.6			

NEAR GUN 60, 1st HALF-VEHICLE CONTROLS-D

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.2	−0.219	−0.219	0.0
2	5.0		100.0	100.2	−0.219	−0.219	501.1
3	10.0		100.0	100.2	−0.219	−0.219	1002.2
4	15.0		100.0	100.2	−0.219	−0.219	1503.3
5	47.0		96.0	95.1	0.897	0.935	4686.8
6	52.0		88.0	87.9	0.125	0.142	5146.3
7	55.0		84.0	80.9	3.132	3.729	5400.0
8	57.0		71.0	75.0	−4.016	−5.656	5556.0
9	65.0		47.0	46.1	0.853	1.814	6043.4
10	110.0		0.0	0.3	−0.263	0.000	6507.7
11	115.0		0.0	0.1	−0.063	0.000	6508.5
12	120.0		0.0	−0.1	0.064	0.000	6508.4
13	125.0		0.0	−0.1	0.146	0.000	6507.9
X@50Y	63.5						
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	1.8						
F-stat	2561.3						
Confidence	90.0						
A	−0.3	C		64.0			
A StdErr	0.9	C StdErr		0.5			
A t	−0.4	C t		140.0			
A ConfLimits	−2.0	C ConfLimits		63.1			
	1.3			64.8			
B	100.5	D		9.5			
B StdErr	1.3	D StdErr		0.6			
B t	78.7	D t		15.8			
B ConfLimits	98.2	D ConfLimits		8.4			
	102.9			10.6			

NEAR GUN 6, 1st HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.8	0.202	0.202	0.0
2	5.0	100.0	99.8	0.203	0.203	499.0
3	10.0	100.0	99.8	0.207	0.207	998.0
4	15.0	100.0	99.8	0.218	0.218	1496.9
5	42.0	97.0	93.2	3.847	3.966	4161.1
6	47.0	71.0	81.8	−10.771	−15.171	4602.4
7	52.0	69.0	59.3	9.661	14.001	4959.7
8	55.0	44.0	42.6	1.420	3.227	5112.7
9	57.0	26.0	32.0	−6.047	−23.257	5187.1
10	110.0	0.0	−0.3	0.265	0.000	5346.0
11	115.0	0.0	−0.3	0.265	0.000	5344.7
12	120.0	0.0	−0.3	0.265	0.000	5343.3
13	125.0	0.0	−0.3	0.265	0.000	5342.1
X@50Y	53.7					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.4					
F−stat	263.4					
Confidence	90.0					
A	−0.3	C	53.7			
A StdErr	2.7	C StdErr	0.7			
A t	−0.1	C t	79.9			
A ConfLimits	−5.2	C ConfLimits	52.5			
	4.7		55.0			
B	100.1	D	−4.4			
B StdErr	3.8	D StdErr	0.8			
B t	26.4	D t	−5.8			
B ConfLimits	93.1	D ConfLimits	−5.8			
	107.0		−3.0			

NEAR GUN 6, 1st HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	−0.040	−0.040	0.0
2	5.0	100.0	100.0	−0.040	−0.040	500.2
3	10.0	100.0	100.0	−0.040	−0.040	1000.4
4	15.0	100.0	100.0	−0.040	−0.040	1500.6
5	42.0	96.0	94.3	1.691	1.761	4181.3
6	47.0	80.0	83.6	−3.574	−4.468	4629.4
7	52.0	68.0	64.6	3.412	5.018	5003.0
8	55.0	50.0	50.5	−0.505	−1.010	5175.9
9	57.0	40.0	41.0	−0.968	−2.421	5267.3
10	110.0	0.0	−0.0	0.026	0.000	5511.1
11	115.0	0.0	−0.0	0.026	0.000	5511.0
12	120.0	0.0	−0.0	0.026	0.000	5510.9
13	125.0	0.0	−0.0	0.026	0.000	5510.7

X@50Y	55.1		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	1.8		
F−stat	2409.0		
Confidence	90.0		
A	−0.0	C	55.1
A StdErr	0.9	C StdErr	0.3
A t	−0.0	C t	213.1
A ConfLimits	−1.7	C ConfLimits	54.6
	1.6		55.6
B	100.1	D	−8.3
B StdErr	1.2	D StdErr	0.5
B t	80.2	D t	−16.4
B ConfLimits	97.8	D ConfLimits	−9.2
	102.4		−7.4

NEAR GUN 6, 1st HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	−0.4	100.386	100.386	0.0
2	5.0	100.0	100.2	−0.213	−0.213	501.1
3	10.0	100.0	100.2	−0.213	−0.213	1002.1
4	15.0	100.0	100.2	−0.213	−0.213	1503.2
5	42.0	96.0	89.1	6.916	7.204	4163.0
6	47.0	59.0	72.9	−13.935	−23.618	4571.9
7	52.0	60.0	50.0	9.985	16.641	4880.5
8	55.0	48.0	36.6	11.400	23.751	5010.0
9	57.0	14.0	28.9	−14.895	−106.395	5075.3
10	110.0	0.0	−0.3	0.318	0.000	5281.9
11	115.0	0.0	−0.3	0.342	0.000	5280.2
12	120.0	0.0	−0.4	0.357	0.000	5278.5
13	125.0	0.0	−0.4	0.366	0.000	5276.7
X@50Y	52.0					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	8.8					
F–stat	98.7					
Confidence	90.0					
A	100.2	C	52.0			
A StdErr	4.3	C StdErr	1.3			
A t	23.1	C t	40.4			
A ConfLimits	92.3	C ConfLimits	49.7			
	108.2		54.4			
B	−100.6	D	−9.7			
B StdErr	6.2	D StdErr	2.5			
B t	−16.2	D t	−3.9			
B ConfLimits	−112.0	D ConfLimits	−14.4			
	−89.2		−5.1			

NEAR GUN 6, 1st HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.1	−0.115	−0.115	0.0
2	5.0		100.0	100.1	−0.115	−0.115	500.6
3	10.0		100.0	100.1	−0.115	−0.115	1001.2
4	15.0		100.0	100.1	−0.115	−0.115	1501.7
5	42.0		98.0	94.4	3.570	3.643	4184.9
6	47.0		78.0	83.6	−5.598	−7.176	4633.4
7	52.0		63.0	64.4	−1.351	−2.145	5006.5
8	55.0		63.0	50.1	12.911	20.494	5178.4
9	57.0		31.0	40.5	−9.459	−30.511	5268.9
10	110.0		0.0	−0.1	0.097	0.000	5502.7
11	115.0		0.0	−0.1	0.097	0.000	5502.2
12	120.0		0.0	−0.1	0.097	0.000	5501.7
13	125.0		0.0	−0.1	0.097	0.000	5501.2
X@50Y							
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	5.8						
F−stat	227.9						
Confidence	90.0						
A	−0.1	C		55.0			
A StdErr	2.9	C StdErr		0.8			
A t	−0.0	C t		66.3			
A ConfLimits	−5.4	C ConfLimits		53.5			
	5.2			56.5			
B	100.2	D		−8.2			
B StdErr	4.1	D StdErr		1.6			
B t	24.7	D t		−5.1			
B ConfLimits	92.8	D ConfLimits		−11.2			
	107.7			−5.3			

FAR GUN 60, 1st HALF-VEHICLE CONTROLS-A

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.1	-0.129	-0.129	0.0
2	5.0		100.0	100.1	-0.129	-0.129	500.6
3	10.0		100.0	100.1	-0.129	-0.129	1001.3
4	15.0		100.0	100.1	-0.127	-0.127	1501.9
5	42.0		86.0	82.4	3.564	4.144	4125.4
6	47.0		56.0	63.0	-7.045	-12.580	4492.1
7	52.0		45.0	39.5	5.460	12.134	4748.8
8	55.0		30.0	26.6	3.384	11.279	4847.5
9	57.0		14.0	19.4	-5.374	-38.386	4893.3
10	110.0		0.0	-0.1	0.131	0.000	4976.9
11	115.0		0.0	-0.1	0.131	0.000	4976.2
12	120.0		0.0	-0.1	0.131	0.000	4975.5
13	125.0		0.0	-0.1	0.131	0.000	4974.9
X@50Y	49.8						
Equation	y=a+b0.5(1+erf((x-c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	3.8						
F-stat	517.9						
Confidence	90.0						
A	-0.1	C		49.8			
A StdErr	1.9	C StdErr		0.6			
A t	-0.1	C t		89.1			
A ConfLimits	-3.6	C ConfLimits		48.8			
	3.4			50.8			
B	100.3	D		-8.4			
B StdErr	2.7	D StdErr		0.8			
B t	37.0	D t		-10.3			
B ConfLimits	95.3	D ConfLimits		-9.9			
	105.2			-6.9			

FAR GUN 60, 1st HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.3	−0.295	−0.295	0.0
2	5.0	100.0	100.3	−0.295	−0.295	501.5
3	10.0	100.0	100.3	−0.293	−0.293	1002.9
4	15.0	100.0	100.3	−0.278	−0.278	1504.4
5	42.0	92.0	84.2	7.801	8.479	4123.7
6	47.0	58.0	69.9	−11.865	−20.457	4511.0
7	52.0	52.0	51.6	0.383	0.736	4815.7
8	55.0	56.0	40.2	15.754	28.131	4953.4
9	57.0	22.0	33.0	−11.049	−50.222	5026.6
10	110.0	0.0	−0.0	0.035	0.000	5252.4
11	115.0	0.0	−0.0	0.035	0.000	5252.2
12	120.0	0.0	−0.0	0.035	0.000	5252.0
13	125.0	0.0	−0.0	0.035	0.000	5251.9
X@50Y	52.4					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	8.0					
F−stat	115.4					
Confidence	90.0					
A	−0.0	C	52.4			
A StdErr	4.0	C StdErr	1.3			
A t	−0.0	C t	39.2			
A ConfLimits	−7.3	C ConfLimits	49.9			
	7.3		54.8			
B	100.3	D	−10.5			
B StdErr	5.6	D StdErr	2.5			
B t	17.8	D t	−4.2			
B ConfLimits	90.0	D ConfLimits	−15.0			
	110.7		−5.9			

FAR GUN 60, 1st HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.077	−0.077	0.0
2	5.0	100.0	100.1	−0.077	−0.077	500.4
3	10.0	100.0	100.1	−0.076	−0.076	1000.8
4	15.0	100.0	100.1	−0.065	−0.065	1501.1
5	42.0	84.0	81.1	2.904	3.457	4102.5
6	47.0	58.0	64.1	−6.145	−10.596	4467.8
7	52.0	48.0	43.8	4.214	8.779	4738.1
8	55.0	36.0	32.0	3.999	11.108	4851.5
9	57.0	20.0	25.0	−4.975	−24.877	4908.3
10	110.0	0.0	−0.1	0.075	0.000	5048.7
11	115.0	0.0	−0.1	0.075	0.000	5048.3
12	120.0	0.0	−0.1	0.075	0.000	5047.9
13	125.0	0.0	−0.1	0.075	0.000	5047.5
X@50Y	50.5					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.4					
F−stat	636.2					
Confidence	90.0					
A	−0.1	C	50.5			
A StdErr	1.7	C StdErr	0.5			
A t	−0.0	C t	92.9			
A ConfLimits	−3.2	C ConfLimits	49.5			
	3.0		51.5			
B	100.2	D	−9.7			
B StdErr	2.4	D StdErr	0.9			
B t	41.5	D t	−10.8			
B ConfLimits	95.7	D ConfLimits	−11.3			
	104.6		−8.0			

FAR GUN 60, 1st HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.053	−0.053	0.0
2	5.0	100.0	100.0	−0.047	−0.047	500.3
3	10.0	100.0	100.0	−0.031	−0.031	1000.5
4	15.0	100.0	100.0	0.011	0.011	1500.5
5	42.0	92.0	88.0	4.013	4.362	4137.0
6	47.0	65.0	73.2	−8.210	−12.630	4543.7
7	52.0	52.0	50.5	1.509	2.902	485[illegible]
8	55.0	53.0	36.1	16.943	31.967	498[illegible]
9	57.0	12.0	27.5	−15.509	−129.244	5048.2
10	110.0	0.0	−0.3	0.343	0.000	5195.9
11	115.0	0.0	−0.3	0.344	0.000	5194.2
12	120.0	0.0	−0.3	0.344	0.000	5192.5
13	125.0	0.0	−0.3	0.344	0.000	5190.8

X@50Y	52.1		
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	8.3		
F−stat	111.4		
Confidence	90.0		
A	100.1	C	52.1
A StdErr	4.1	C StdErr	1.2
A t	24.4	C t	44.8
A ConfLimits	92.5	C ConfLimits	50.0
	107.6		54.3
B	−100.4	D	5.1
B StdErr	5.8	D StdErr	1.2
B t	−17.2	D t	4.2
B ConfLimits	−111.1	D ConfLimits	2.9
	−89.7		7.3

LEOPARD II, 1st HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.8	−0.826	−0.826	0.0
2	5.0	100.0	100.8	−0.826	−0.826	504.1
3	10.0	100.0	100.8	−0.826	−0.826	1008.3
4	15.0	100.0	100.8	−0.825	−0.825	1512.4
5	47.0	94.0	90.1	3.907	4.156	4683.2
6	52.0	88.0	78.6	9.427	10.713	5107.2
7	55.0	61.0	69.2	−8.156	−13.370	5329.2
8	57.0	56.0	62.2	−6.164	−11.007	5460.6
9	65.0	40.0	34.6	5.439	13.599	5844.2
10	110.0	0.0	0.5	−0.505	0.000	6202.0
11	115.0	0.0	0.3	−0.323	0.000	6204.0
12	120.0	0.0	0.2	−0.202	0.000	6205.3
13	125.0	0.0	0.1	−0.121	0.000	6206.1
X@50Y	60.3					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.2					
F–stat	283.2					
Confidence	90.0					
A	−0.1	C	60.3			
A StdErr	2.7	C StdErr	1.1			
A t	−0.0	C t	53.1			
A ConfLimits	−5.0	C ConfLimits	58.2			
	4.8		62.3			
B	100.9	D	8.6			
B StdErr	3.8	D StdErr	1.4			
B t	26.7	D t	6.0			
B ConfLimits	94.0	D ConfLimits	6.0			
	107.8		11.2			

LEOPARD II, 1st HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	97.0	2.954	2.954	0.0
2	5.0	100.0	97.0	2.954	2.954	485.2
3	10.0	100.0	97.0	2.954	2.954	970.5
4	15.0	100.0	97.0	2.954	2.954	1455.7
5	47.0	92.0	97.0	−5.038	−5.476	4561.2
6	52.0	88.0	96.1	−8.071	−9.171	5045.4
7	55.0	84.0	82.2	1.766	2.103	5320.8
8	57.0	44.0	44.6	−0.646	−1.469	5451.3
9	65.0	22.0	4.4	17.609	80.040	5541.0
10	110.0	0.0	4.4	−4.359	0.000	5671.7
11	115.0	0.0	4.4	−4.359	0.000	5800.8
12	120.0	0.0	4.4	−4.359	0.000	5824.1
13	125.0	0.0	4.4	−4.359	0.000	5709.1
X@50Y	56.8					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.6					
F−stat	140.8					
Confidence	90.0					
A	4.4	C	56.7			
A StdErr	3.4	C StdErr	0.3			
A t	1.3	C t	170.9			
A ConfLimits	−1.8	C ConfLimits	56.1			
	10.6		57.3			
B	92.7	D	−1.0			
B StdErr	4.6	D StdErr	0.4			
B t	19.9	D t	−2.7			
B ConfLimits	84.2	D ConfLimits	−1.7			
	101.2		−0.3			

LEOPARD II, 1st HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	96.4	3.623	3.623	0.0
2	5.0	100.0	96.4	3.623	3.623	481.9
3	10.0	100.0	96.4	3.623	3.623	963.8
4	15.0	100.0	96.4	3.623	3.623	1445.7
5	47.0	90.0	96.4	−6.377	−7.086	4529.7
6	52.0	88.0	96.3	−8.286	−9.415	5011.6
7	55.0	78.0	77.8	0.248	0.318	5286.9
8	57.0	28.0	28.1	−0.135	−0.482	5393.5
9	65.0	30.0	6.0	24.012	80.039	5457.2
10	110.0	0.0	6.0	−5.988	0.000	5650.8
11	115.0	0.0	6.0	−5.988	0.000	5857.3
12	120.0	0.0	6.0	−5.988	0.000	5780.3
13	125.0	0.0	6.0	−5.988	0.000	5699.9

X@50Y	56.1		
Equation	y=a+b0.5(1+erf((x−c)/(02d))) [Cumulative]		
Adjr2	0.9		
r2	1.0		
Fit StdErr	9.9		
F−stat	80.0		
Confidence	90.0		
A	6.0	C	56.1
A StdErr	4.4	C StdErr	0.4
A t	1.4	C t	150.8
A ConfLimits	−2.1	C ConfLimits	55.4
	14.1		56.8
B	90.4	D	−1.3
B StdErr	6.0	D StdErr	0.5
B t	15.0	D t	−2.8
B ConfLimits	79.4	D ConfLimits	−2.2
	101.4		−0.5

LEOPARD II, 1st HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.00	100.00	100.97	−0.967	−0.967	0.00
2	5.00	100.00	100.97	−0.967	−0.967	504.83
3	10.00	100.00	100.97	−0.967	−0.967	1009.67
4	15.00	100.00	100.97	−0.967	−0.967	1514.50
5	47.00	96.00	92.66	3.339	3.478	4708.69
6	52.00	86.00	80.92	5.082	5.909	5145.74
7	55.00	78.00	70.34	7.659	9.819	5373.23
8	57.00	45.00	62.20	−17.198	−38.217	5505.87
9	65.00	37.00	30.36	6.636	17.935	5870.73
10	110.00	0.00	0.50	−0.502	0.000	6139.82
11	115.00	0.00	0.42	−0.425	0.000	6142.13
12	120.00	0.00	0.38	−0.377	0.000	6144.12
13	125.00	0.00	0.35	−0.347	0.000	6145.92
X@50Y	59.90					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	0.97					
r2	0.98					
Fit StdErr	6.99					
F–stat	158.91					
Confidence	90.00					
A	0.29	C	59.71			
A StdErr	3.54	C StdErr	1.30			
A t	0.08	C t	46.09			
A ConfLimits	−6.20	C ConfLimits	57.34			
	6.77		62.09			
B	100.68	D	10.06			
B StdErr	4.97	D StdErr	2.13			
B t	20.24	D t	4.73			
B ConfLimits	91.56	D ConfLimits	6.16			
	109.80		13.96			

MARDER, 1st HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.5	−0.498	−0.498	0.0
2	5.0		100.0	100.5	−0.498	−0.498	502.5
3	10.0		100.0	100.5	−0.498	−0.498	1005.0
4	15.0		100.0	100.5	−0.497	−0.497	1507.5
5	42.0		99.0	93.3	5.674	5.731	4194.2
6	47.0		77.0	81.2	−4.183	−5.432	4633.9
7	52.0		56.0	61.1	−5.095	−9.098	4992.4
8	55.0		59.0	46.9	12.102	20.511	5154.5
9	57.0		31.0	37.6	−6.556	−21.149	5238.9
10	110.0		0.0	−0.0	0.012	0.000	5456.3
11	115.0		0.0	−0.0	0.012	0.000	5456.2
12	120.0		0.0	−0.0	0.012	0.000	5456.2
13	125.0		0.0	−0.0	0.012	0.000	5456.1
X@50Y	54.3						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	5.4						
F−stat	258.7						
Confidence	90.0						
A	−0.0	C		54.3			
A StdErr	2.7	C StdErr		0.8			
A t	−0.0	C t		70.4			
A ConfLimits	−5.0	C ConfLimits		52.9			
	5.0			55.7			
B	100.5	D		−8.4			
B StdErr	3.8	D StdErr		1.4			
B t	26.3	D t		−5.8			
B ConfLimits	93.5	D ConfLimits		−11.0			
	107.5			−5.7			

MARDER, 1st HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	98.9	1.057	1.057	0.0
2	5.0		100.0	98.9	1.057	1.057	494.7
3	10.0		100.0	98.9	1.057	1.057	989.4
4	15.0		100.0	98.9	1.057	1.057	1484.1
5	42.0		96.0	96.8	−0.784	−0.817	4148.9
6	47.0		84.0	88.9	−4.907	−5.842	4617.7
7	52.0		60.0	62.9	−2.918	−4.864	5007.1
8	55.0		56.0	39.2	16.795	29.991	5160.5
9	57.0		10.0	25.1	−15.104	−151.037	5224.3
10	110.0		0.0	−0.7	0.673	0.000	5281.3
11	115.0		0.0	−0.7	0.673	0.000	5277.3
12	120.0		0.0	−0.7	0.673	0.000	5272.6
13	125.0		0.0	−0.7	0.673	0.000	5271.5
X@50Y	53.6						
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	7.8						
F−stat	132.2						
Confidence	90.0						
A	98.9	C		53.8			
A StdErr	3.6	C StdErr		0.7			
A t	27.4	C t		72.7			
A ConfLimits	92.3	C ConfLimits		52.4			
	105.6			55.1			
B	−99.6	D		3.1			
B StdErr	5.4	D StdErr		0.8			
B t	−18.6	D t		3.9			
B ConfLimits	−109.4	D ConfLimits		1.6			
	−89.8			4.5			

MARDER, 1st HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	98.7	1.290	1.290	0.0
2	5.0		100.0	98.7	1.290	1.290	493.5
3	10.0		100.0	98.7	1.290	1.290	987.1
4	15.0		100.0	98.7	1.291	1.291	1480.6
5	42.0		94.0	97.2	−3.228	−3.434	4141.7
6	47.0		88.0	90.4	−2.351	−2.671	4615.1
7	52.0		60.0	63.2	−3.153	−5.254	5010.8
8	55.0		50.0	36.9	13.067	26.133	5161.1
9	57.0		10.0	22.0	−12.035	−120.349	5219.4
10	110.0		0.0	−0.6	0.634	0.000	5258.5
11	115.0		0.0	−0.6	0.634	0.000	5253.7
12	120.0		0.0	−0.6	0.634	0.000	5248.3
13	125.0		0.0	−0.6	0.634	0.000	5249.7
X@50Y	53.5						
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	6.2						
F−stat	210.4						
Confidence	90.0						
A	98.7	C		53.6			
A StdErr	2.8	C StdErr		0.6			
A t	34.9	C t		97.3			
A ConfLimits	93.5	C ConfLimits		52.6			
	103.9			54.6			
B	−99.3	D		2.8			
B StdErr	4.2	D StdErr		0.6			
B t	−23.4	D t		4.9			
B ConfLimits	−107.1	D ConfLimits		1.7			
	−91.6			3.8			

MARDER, 1st HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.2	0.766	0.766	0.0
2	5.0	100.0	99.2	0.766	0.766	496.2
3	10.0	100.0	99.2	0.766	0.766	992.3
4	15.0	100.0	99.2	0.766	0.766	1488.5
5	42.0	98.0	97.3	0.679	0.693	4162.0
6	47.0	84.0	90.1	−6.100	−7.262	4634.8
7	52.0	67.0	65.1	.864	2.782	5032.9
8	55.0	47.0	41.3	5.737	12.206	5193.0
9	57.0	20.0	26.7	−6.674	−33.372	5260.4
10	110.0	0.0	−0.4	0.358	0.000	5338.2
11	115.0	0.0	−0.4	0.358	0.000	5336.0
12	120.0	0.0	−0.4	0.358	0.000	5332.5
13	125.0	0.0	−0.4	0.358	0.000	5332.9
X@50Y	53.9					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.7					
F–stat	597.8					
Confidence	90.0					
A	−0.4	C	54.0			
A StdErr	1.8	C StdErr	0.3			
A t	−0.2	C t	158.1			
A ConfLimits	−3.7	C ConfLimits	53.4			
	3.0		54.6			
B	99.6	D	−3.0			
B StdErr	2.5	D StdErr	0.4			
B t	39.6	D t	−8.2			
B ConfLimits	95.0	D ConfLimits	−3.7			
	104.2		−2.4			

NEAR GUN 60, 1st HALF–NOISE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.033	0.033	0.0
2	5.0	100.0	100.0	0.033	0.033	499.8
3	10.0	100.0	100.0	0.033	0.033	999.7
4	15.0	100.0	100.0	0.033	0.033	1499.5
5	50.0	100.0	98.7	1.275	1.275	4992.9
6	55.0	94.0	96.7	−2.699	−2.871	5482.1
7	60.0	93.0	92.3	0.726	0.780	5955.9
8	65.0	83.0	83.9	−0.905	−1.090	6398.3
9	70.0	77.0	70.7	6.298	8.179	6786.7
10	75.0	45.0	54.0	−9.013	−20.029	7099.3
11	80.0	42.0	37.3	4.661	11.097	7326.9
12	110.0	0.0	1.1	−1.060	0.000	7684.3
13	115.0	0.0	0.2	−0.245	0.000	7687.4
14	120.0	0.0	−0.3	0.258	0.000	7687.2
15	125.0	0.0	−0.6	0.574	0.000	7685.1
X@50Y	76.2					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.7					
F−stat	612.0					
Confidence	90.0					
A	−1.2	C	76.3			
A StdErr	2.2	C StdErr	0.8			
A t	−0.5	C t	90.3			
A ConfLimits	−5.0	C ConfLimits	74.8			
	2.7		77.9			
B	101.1	D	10.4			
B StdErr	2.9	D StdErr	1.3			
B t	34.9	D t	8.0			
B ConfLimits	95.9	D ConfLimits	8.0			
	106.3		12.7			

NEAR GUN 60, 1st HALF–NOISE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	98.6	1.428	1.428	0.0
2	5.0	100.0	98.5	1.501	1.501	492.7
3	10.0	100.0	98.4	1.609	1.609	984.9
4	15.0	100.0	98.2	1.768	1.768	1476.5
5	50.0	80.0	91.5	−11.504	−14.381	4843.1
6	55.0	88.0	88.4	−0.366	−0.416	5293.2
7	60.0	86.0	84.1	1.934	2.249	5724.8
8	65.0	80.0	78.4	1.638	2.047	6131.5
9	70.0	74.0	71.1	2.888	3.902	6505.8
10	75.0	62.0	62.4	−0.380	−0.613	6840.1
11	80.0	53.0	52.5	0.479	0.903	7127.7
12	110.0	0.0	4.5	−4.497	0.000	7876.4
13	115.0	0.0	1.1	−1.056	0.000	7889.8
14	120.0	0.0	−1.4	1.411	0.000	7888.6
15	125.0	0.0	−3.1	3.148	0.000	7876.9
X@50Y	81.2					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.2					
F−stat	443.4					
Confidence	90.0					
A	−7.0	C	83.2			
A StdErr	4.8	C StdErr	2.5			
A t	−1.4	C t	32.8			
A ConfLimits	−15.6	C ConfLimits	78.6			
	1.7		87.8			
B	105.7	D	−12.7			
B StdErr	5.9	D StdErr	2.0			
B t	17.8	D t	−6.2			
B ConfLimits	95.0	D ConfLimits	−16.4			
	116.3		−9.0			

NEAR GUN 60, 1st HALF–NOISE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.3	−0.275	−0.275	0.0
2	5.0	100.0	100.3	−0.273	−0.273	501.4
3	10.0	100.0	100.3	−0.267	−0.267	1002.7
4	15.0	100.0	100.2	−0.248	−0.248	1504.0
5	50.0	100.0	90.0	9.951	9.951	4935.7
6	55.0	69.0	83.3	−14.346	−20.791	5370.2
7	60.0	80.0	74.3	5.673	7.091	5765.3
8	65.0	62.0	63.3	−1.304	−2.104	6110.1
9	70.0	50.0	51.1	−1.066	−2.133	6396.3
10	75.0	45.0	38.7	6.276	13.946	6620.6
11	80.0	23.0	27.4	−4.417	−19.203	6785.3
12	110.0	0.0	0.3	−0.343	0.000	7046.1
13	115.0	0.0	−0.1	0.073	0.000	7046.6
14	120.0	0.0	−0.2	0.250	0.000	7045.7
15	125.0	0.0	−0.3	0.318	0.000	7044.3

X@50Y	70.4		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	6.0		
F−stat	218.9		
Confidence	90.0		
A	−0.4	C	70.4
A StdErr	3.1	C StdErr	1.5
A t	−0.1	C t	46.4
A ConfLimits	−6.0	C ConfLimits	67.7
	5.3		73.2
B	100.6	D	−16.1
B StdErr	4.4	D StdErr	2.4
B t	22.9	D t	−6.8
B ConfLimits	92.7	D ConfLimits	−20.3
	108.5		−11.8

NEAR GUN 60, 1st HALF–NOISE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.9	0.091	0.091	0.0
2	5.0	100.0	99.9	0.091	0.091	499.5
3	10.0	100.0	99.9	0.094	0.094	999.1
4	15.0	100.0	99.9	0.101	0.101	1498.6
5	50.0	90.0	94.2	−4.236	−4.707	4955.5
6	55.0	94.0	89.9	4.122	4.385	5416.6
7	60.0	82.0	83.5	−1.470	−1.793	5850.9
8	65.0	80.0	74.9	5.132	6.416	6247.6
9	70.0	66.0	64.3	1.678	2.542	6596.3
10	75.0	38.0	52.5	−14.517	−38.203	6888.7
11	80.0	50.0	40.5	9.549	19.098	7121.0
12	110.0	0.0	1.3	−1.322	0.000	7576.5
13	115.0	0.0	0.2	−0.217	0.000	7580.0
14	120.0	0.0	−0.3	0.329	0.000	7579.6
15	125.0	0.0	−0.6	0.575	0.000	7577.2
X@50Y	76.0					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.8					
F−stat	237.4					
Confidence	90.0					
A	−0.7	C	76.2			
A StdErr	3.3	C StdErr	1.8			
A t	−0.2	C t	43.1			
A ConfLimits	−6.6	C ConfLimits	73.0			
	5.1		79.4			
B	100.6	D	−16.5			
B StdErr	4.5	D StdErr	2.8			
B t	22.2	D t	−5.8			
B ConfLimits	92.5	D ConfLimits	−21.6			
	108.8		−11.4			

LEOPARD II, 1st HALF–NOISE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.2	0.759	0.759	0.0
2	5.0	100.0	99.2	0.765	0.765	496.2
3	10.0	100.0	99.2	0.777	0.777	992.3
4	15.0	100.0	99.2	0.800	0.800	1488.4
5	50.0	90.0	94.4	−4.427	−4.919	4925.4
6	55.0	90.0	90.3	−0.263	−0.292	5388.1
7	60.0	86.0	83.1	2.886	3.356	5823.1
8	65.0	69.0	72.0	−2.982	−4.322	6212.6
9	70.0	57.0	57.0	−0.044	−0.077	6536.4
10	75.0	47.0	40.5	6.458	13.741	6780.3
11	80.0	20.0	25.8	−5.811	−29.053	6944.9
12	110.0	0.0	0.1	−0.068	0.000	7152.2
13	115.0	0.0	−0.2	0.247	0.000	7151.6
14	120.0	0.0	−0.4	0.410	0.000	7149.9
15	125.0	0.0	−0.5	0.493	0.000	7147.7
X@50Y	72.1					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.2					
F−stat	792.5					
Confidence	90.0					
A	−0.6	C	72.3			
A StdErr	1.7	C StdErr	0.7			
A t	−0.3	C t	108.4			
A ConfLimits	−3.6	C ConfLimits	71.1			
	2.4		73.5			
B	99.8	D	−7.5			
B StdErr	2.3	D StdErr	0.7			
B t	42.9	D t	−11.5			
B ConfLimits	95.6	D ConfLimits	−8.7			
	104.0		−6.3			

LEOPARD II, 1st HALF–NOISE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.3	0.727	0.727	0.0
2	5.0	100.0	99.3	0.732	0.732	496.4
3	10.0	100.0	99.3	0.743	0.743	992.7
4	15.0	100.0	99.2	0.765	0.765	1488.9
5	50.0	90.0	94.5	−4.522	−5.025	4928.1
6	55.0	90.0	90.3	−0.319	−0.355	5391.2
7	60.0	84.0	83.0	0.962	1.146	5826.1
8	65.0	74.0	71.6	2.359	3.188	6214.6
9	70.0	54.0	56.4	−2.361	−4.372	6535.9
10	75.0	42.0	39.6	2.371	5.646	6775.8
11	80.0	23.0	24.9	−1.921	−8.351	6935.7
12	110.0	0.0	0.2	−0.186	0.000	7134.9
13	115.0	0.0	−0.1	0.096	0.000	7135.1
14	120.0	0.0	−0.2	0.240	0.000	7134.2
15	125.0	0.0	−0.3	0.313	0.000	7132.8
X@50Y	71.9					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.0					
F−stat	2062.2					
Confidence	90.0					
A	−0.4	C	72.1			
A StdErr	1.0	C StdErr	0.4			
A t	−0.4	C t	176.5			
A ConfLimits	−2.2	C ConfLimits	71.3			
	1.5		72.8			
B	99.7	D	−7.4			
B StdErr	1.4	D StdErr	0.4			
B t	69.3	D t	−18.7			
B ConfLimits	97.1	D ConfLimits	−8.1			
	102.3		−6.7			

LEOPARD II, 1st HALF–NOISE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.5	0.528	0.528	0.0
2	5.0	100.0	99.5	0.528	0.528	497.4
3	10.0	100.0	99.5	0.528	0.528	994.7
4	15.0	100.0	99.5	0.528	0.528	1492.1
5	50.0	100.0	95.4	4.631	4.631	4956.2
6	55.0	80.0	89.1	−9.094	−11.367	5419.2
7	60.0	76.0	77.7	−1.742	−2.293	5838.6
8	65.0	62.0	61.3	0.667	1.075	6188.1
9	70.0	50.0	42.4	7.626	15.252	6447.6
10	75.0	28.0	24.9	3.134	11.192	6614.3
11	80.0	0.0	11.9	−11.944	0.000	6704.1
12	110.0	0.0	−1.2	1.150	0.000	6738.1
13	115.0	0.0	−1.2	1.153	0.000	6732.3
14	120.0	0.0	−1.2	1.154	0.000	6726.6
15	125.0	0.0	−1.2	1.154	0.000	6720.8
X@50Y	68.0					
Equation	y=a+b0.5(1+erf((x−c)/(02d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.4					
F−stat	302.0					
Confidence	90.0					
A	−1.2	C	68.2			
A StdErr	2.7	C StdErr	1.0			
A t	−0.4	C t	70.6			
A ConfLimits	−6.0	C ConfLimits	66.5			
	3.7		70.0			
B	100.6	D	−10.5			
B StdErr	3.8	D StdErr	1.3			
B t	26.6	D t	−8.1			
B ConfLimits	93.8	D ConfLimits	−12.8			
	107.4		−8.1			

LEOPARD II, 1st HALF–NOISE CONTROLS–D

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.3	−0.301	−0.301	0.0
2	5.0		100.0	100.3	−0.301	−0.301	501.5
3	10.0		100.0	100.3	−0.301	−0.301	1003.0
4	15.0		100.0	100.3	−0.300	−0.300	1504.5
5	50.0		100.0	95.2	4.782	4.782	4986.2
6	55.0		89.0	90.1	−1.054	−1.184	5450.5
7	60.0		78.0	81.8	−3.847	−4.932	5881.6
8	65.0		66.0	70.4	−4.445	−6.734	6263.6
9	70.0		65.0	56.6	8.404	12.929	6582.0
10	75.0		42.0	41.9	0.106	0.253	6828.1
11	80.0		25.0	28.2	−3.248	−12.990	7002.7
12	110.0		0.0	0.0	−0.048	0.000	7235.0
13	115.0		0.0	−0.1	0.139	0.000	7234.7
14	120.0		0.0	−0.2	0.198	0.000	7233.8
15	125.0		0.0	−0.2	0.215	0.000	7232.8
X@50Y	72.2						
Equation	y=a+b0.5(1+erf((x−c)/(√2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	3.6						
F−stat	652.7						
Confidence	90.0						
A	−0.2	C		72.2			
A StdErr	1.8	C StdErr		0.8			
A t	−0.1	C t		91.7			
A ConfLimits	−3.5	C ConfLimits		70.8			
	3.0			73.6			
B	100.5	D		−13.6			
B StdErr	2.5	D StdErr		1.2			
B t	39.8	D t		−11.2			
B ConfLimits	96.0	D ConfLimits		−15.7			
	105.1			−11.4			

LEOPARD II, 1st HALF–NOISE CONTROLS–D

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.3	−0.301	−0.301	0.0
2	5.0		100.0	100.3	−0.301	−0.301	501.5
3	10.0		100.0	100.3	−0.301	−0.301	1003.0
4	15.0		100.0	100.3	−0.300	−0.300	1504.5
5	50.0		100.0	95.2	4.782	4.782	4986.2
6	55.0		89.0	90.1	−1.054	−1.184	5450.5
7	60.0		78.0	81.8	−3.847	−4.932	5881.6
8	65.0		66.0	70.4	−4.445	−6.734	6263.6
9	70.0		65.0	56.6	8.404	12.929	6582.0
10	75.0		42.0	41.9	0.106	0.253	6828.1
11	80.0		25.0	28.2	−3.248	−12.990	7002.7
12	110.0		0.0	0.0	−0.048	0.000	7235.0
13	115.0		0.0	−0.1	0.139	0.000	7234.7
14	120.0		0.0	−0.2	0.198	0.000	7233.8
15	125.0		0.0	−0.2	0.215	0.000	7232.8
X@50Y	72.2						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	3.6						
F–stat	652.7						
Confidence	90.0						
A	−0.2	C		72.2			
A StdErr	1.8	C StdErr		0.8			
A t	−0.1	C t		91.7			
A ConfLimits	−3.5	C ConfLimits		70.8			
	3.0			73.6			
B	100.5	D		−13.6			
B StdErr	2.5	D StdErr		1.2			
B t	39.8	D t		−11.2			
B ConfLimits	96.0	D ConfLimits		−15.7			
	105.1			−11.4			

LEOPARD II, 1st HALF–NOISE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.3	−0.301	−0.301	0.0
2	5.0	100.0	100.3	−0.301	−0.301	501.5
3	10.0	100.0	100.3	−0.301	−0.301	1003.0
4	15.0	100.0	100.3	−0.300	−0.300	1504.5
5	50.0	100.0	95.2	4.782	4.782	4986.2
6	55.0	89.0	90.1	−1.054	−1.184	5450.5
7	60.0	78.0	81.8	−3.847	−4.932	5881.6
8	65.0	66.0	70.4	−4.445	−6.734	6263.6
9	70.0	65.0	56.6	8.404	12.929	6582.0
10	75.0	42.0	41.9	0.106	0.253	6828.1
11	80.0	25.0	28.2	−3.248	−12.990	7002.7
12	110.0	0.0	0.0	−0.048	0.000	7235.0
13	115.0	0.0	−0.1	0.139	0.000	7234.7
14	120.0	0.0	−0.2	0.198	0.000	7233.8
15	125.0	0.0	−0.2	0.215	0.000	7232.8
X@50Y	72.2					
Equation	y=a+b0.5(1+erf((x−c)/(02d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.6					
F−stat	652.7					
Confidence	90.0					
A	−0.2	C	72.2			
A StdErr	1.8	C StdErr	0.8			
A t	−0.1	C t	91.7			
A ConfLimits	−3.5	C ConfLimits	70.8			
	3.0		73.6			
B	100.5	D	−13.6			
B StdErr	2.5	D StdErr	1.2			
B t	39.8	D t	−11.2			
B ConfLimits	96.0	D ConfLimits	−15.7			
	105.1		−11.4			

VEHICLE 2, 1st HALF–NOISE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.049	0.049	0.0
2	5.0	100.0	99.9	0.059	0.059	499.7
3	10.0	100.0	99.9	0.085	0.085	999.4
4	15.0	100.0	99.9	0.149	0.149	1498.8
5	55.0	75.0	82.8	−7.811	−10.414	5325.1
6	60.0	88.0	75.2	12.808	14.555	5720.8
7	65.0	66.0	66.1	−0.052	−0.079	6074.5
8	70.0	47.0	55.8	−8.829	−18.786	6379.5
9	75.0	46.0	45.2	0.832	1.808	6632.0
10	80.0	38.0	34.8	3.197	8.414	6831.7
11	110.0	0.0	1.4	−1.440	0.000	7239.4
12	115.0	0.0	0.2	−0.241	0.000	7243.3
13	120.0	0.0	−0.4	0.425	0.000	7242.7
14	125.0	0.0	−0.8	0.769	0.000	7239.6
X@50Y	72.7					
Equation	y=a+b0.5(1+erf((x−c)/(√2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.6					
F−stat	230.6					
Confidence	90.0					
A	−1.1	C	73.0			
A StdErr	3.3	C StdErr	1.8			
A t	−0.3	C t	40.4			
A ConfLimits	−7.1	C ConfLimits	69.7			
	5.0		76.3			
B	101.0	D	−18.8			
B StdErr	4.5	D StdErr	3.2			
B t	22.2	D t	−5.9			
B ConfLimits	92.8	D ConfLimits	−24.7			
	109.3		−13.0			

VEHICLE 2, 1st HALF–NOISE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.3	0.674	0.674	0.0
2	5.0	100.0	99.3	0.690	0.690	496.6
3	10.0	100.0	99.3	0.719	0.719	993.1
4	15.0	100.0	99.2	0.770	0.770	1489.4
5	55.0	80.0	88.8	−8.757	−10.947	5367.3
6	60.0	86.0	81.9	4.071	4.734	5795.2
7	65.0	74.0	72.0	1.961	2.650	6181.4
8	70.0	62.0	59.3	2.746	4.429	6510.7
9	75.0	42.0	44.9	−2.950	−7.023	6771.4
10	80.0	31.0	31.3	−0.318	−1.026	6961.3
11	110.0	0.0	0.6	−0.611	0.000	7259.2
12	115.0	0.0	−0.0	0.026	0.000	7260.5
13	120.0	0.0	−0.4	0.388	0.000	7259.4
14	125.0	0.0	−0.6	0.592	0.000	7256.9

X@50Y	73.2		
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	3.4		
F−stat	653.8		
Confidence	90.0		
A	−0.9	C	73.5
A StdErr	1.8	C StdErr	0.8
A t	−0.5	C t	89.7
A ConfLimits	−4.2	C ConfLimits	72.0
	2.5		75.0
B	100.2	D	−8.7
B StdErr	2.6	D StdErr	0.9
B t	38.7	D t	−10.1
B ConfLimits	95.5	D ConfLimits	−10.2
	104.9		−7.1

VEHICLE 2, 1st HALF–NOISE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.205	−0.205	0.0
2	5.0	100.0	100.2	−0.205	−0.205	501.0
3	10.0	100.0	100.2	−0.205	−0.205	1002.0
4	15.0	100.0	100.2	−0.205	−0.205	1503.1
5	55.0	95.0	93.6	1.417	1.491	5480.4
6	60.0	88.0	85.2	2.839	3.226	5929.3
7	65.0	64.0	71.6	−7.577	−11.840	6323.3
8	70.0	58.0	53.9	4.066	7.010	6638.2
9	75.0	38.0	35.5	2.520	6.631	6861.2
10	80.0	17.0	19.9	−2.936	−17.270	6998.0
11	110.0	0.0	−0.1	0.114	0.000	7113.4
12	115.0	0.0	−0.1	0.125	0.000	7112.8
13	120.0	0.0	−0.1	0.126	0.000	7112.1
14	125.0	0.0	−0.1	0.126	0.000	7111.5
X@50Y	71.0					
Equation	y=a+b0.5(1+erf((x−c)/(0̂2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.1					
F−stat	826.7					
Confidence	90.0					
A	−0.1	C	71.0			
A StdErr	1.6	C StdErr	0.6			
A t	−0.1	C t	124.2			
A ConfLimits	−3.0	C ConfLimits	70.0			
	2.7		72.1			
B	100.3	D	−10.6			
B StdErr	2.2	D StdErr	0.8			
B t	45.4	D t	−13.1			
B ConfLimits	96.3	D ConfLimits	−12.1			
	104.3		−9.2			

VEHICLE 2, 1st HALF–NOISE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.053	−0.053	0.0
2	5.0	100.0	100.1	−0.053	−0.053	500.3
3	10.0	100.0	100.1	−0.053	−0.053	1000.5
4	15.0	100.0	100.1	−0.053	−0.053	1500.8
5	55.0	95.0	92.5	2.477	2.607	5458.3
6	60.0	82.0	85.6	−3.583	−4.369	5904.9
7	65.0	76.0	75.3	0.729	0.959	6308.4
8	70.0	62.0	62.0	0.036	0.058	6652.5
9	75.0	49.0	47.1	1.948	3.976	6925.4
10	80.0	31.0	32.5	−1.538	−4.962	7123.7
11	110.0	0.0	0.2	−0.179	0.000	7401.1
12	115.0	0.0	−0.1	0.052	0.000	7401.3
13	120.0	0.0	−0.1	0.125	0.000	7400.8
14	125.0	0.0	−0.1	0.145	0.000	7400.1
X@50Y	74.0					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	1.6					
F−stat	3050.0					
Confidence	90.0					
A	−0.2	C	74.0			
A StdErr	0.8	C StdErr	0.4			
A t	−0.2	C t	205.3			
A ConfLimits	−1.6	C ConfLimits	73.4			
	1.3		74.7			
B	100.2	D	−13.2			
B StdErr	1.1	D StdErr	0.6			
B t	87.4	D t	−22.8			
B ConfLimits	98.1	D ConfLimits	−14.3			
	102.3		−12.2			

NEAR GUN 60, 2nd HALF-VEHICLE CONTROL-A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.020	0.020	0.0
2	5.0	100.0	100.0	0.027	0.027	499.9
3	10.0	100.0	100.0	0.042	0.042	999.7
4	15.0	100.0	99.9	0.073	0.073	1499.4
5	52.0	86.0	88.8	−2.774	−3.226	5117.0
6	57.0	84.0	79.4	4.646	5.530	5539.3
7	61.0	70.0	68.3	1.669	2.385	5835.7
8	63.0	57.0	61.8	−4.781	−8.387	5965.9
9	71.0	35.0	33.7	1.267	3.619	6346.9
10	110.0	0.0	0.1	−0.146	0.000	6629.6
11	115.0	0.0	0.1	−0.052	0.000	6630.1
12	120.0	0.0	0.0	−0.007	0.000	6630.2
13	125.0	0.0	−0.0	0.016	0.000	6630.2
X@50Y	66.3					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.5					
F−stat	1196.3					
Confidence	90.0					
A	−0.0	C	66.3			
A StdErr	1.3	C StdErr	0.5			
A t	−0.0	C t	123.5			
A ConfLimits	−2.4	C ConfLimits	65.3			
	2.3		67.3			
B	100.0	D	−6.9			
B StdErr	1.8	D StdErr	0.5			
B t	55.9	D t	−12.7			
B ConfLimits	96.7	D ConfLimits	−7.9			
	103.3		−5.9			

NEAR GUN 60, 2nd HALF–VEHICLE CONTROL–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.8	−0.847	−0.847	0.0
2	5.0	100.0	100.8	−0.847	−0.847	504.2
3	10.0	100.0	100.8	−0.847	−0.847	1008.5
4	15.0	100.0	100.8	−0.847	−0.847	1512.7
5	52.0	95.0	96.2	−1.245	−1.311	5228.3
6	57.0	95.0	85.3	9.729	10.241	5686.6
7	61.0	69.0	67.6	1.360	1.971	5995.1
8	63.0	46.0	56.5	−10.504	−22.834	6119.4
9	71.0	26.0	18.8	7.238	27.840	6404.7
10	110.0	0.0	0.8	−0.817	0.000	6538.6
11	115.0	0.0	0.8	−0.799	0.000	6542.7
12	120.0	0.0	0.8	−0.790	0.000	6546.6
13	125.0	0.0	0.8	−0.786	0.000	6550.5
X@50Y	64.1					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.4					
F–stat	273.1					
Confidence	90.0					
A	0.8	C	64.0			
A StdErr	2.7	C StdErr	0.8			
A t	0.3	C t	83.3			
A ConfLimits	−4.2	C ConfLimits	62.6			
	5.7		65.4			
B	100.1	D	14.6			
B StdErr	3.8	D StdErr	2.4			
B t	26.3	D t	6.0			
B ConfLimits	93.1	D ConfLimits	10.2			
	107.0		19.0			

NEAR GUN 60, 2nd HALF–VEHICLE CONTROL–C

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.0	0.019	0.019	0.0
2	5.0		100.0	100.0	0.019	0.019	499.9
3	10.0		100.0	100.0	0.019	0.019	999.8
4	15.0		100.0	100.0	0.019	0.019	1499.7
5	52.0		92.0	91.3	0.702	0.763	5151.5
6	57.0		78.0	82.2	−4.244	−5.441	5587.3
7	61.0		82.0	71.7	10.336	12.605	5896.0
8	63.0		58.0	65.5	−7.465	−12.871	6033.2
9	71.0		40.0	39.3	0.660	1.649	6451.4
10	110.0		0.0	0.5	−0.528	0.000	6868.5
11	115.0		0.0	0.1	−0.096	0.000	6870.0
12	120.0		0.0	−0.2	0.187	0.000	6869.7
13	125.0		0.0	−0.4	0.374	0.000	6868.3
X@50Y	67.7						
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	4.5						
F−stat	375.6						
Confidence	90.0						
A	−0.8	C		67.8			
A StdErr	2.5	C StdErr		1.2			
A t	−0.3	C t		58.0			
A ConfLimits	−5.3	C ConfLimits		65.6			
	3.7			69.9			
B	100.8	D		8.9			
B StdErr	3.4	D StdErr		1.4			
B t	29.4	D t		6.5			
B ConfLimits	94.5	D ConfLimits		6.4			
	107.1			11.4			

NEAR GUN 60, 2nd HALF–VEHICLE CONTROL–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	101.3	−1.313	−1.313	0.0
2	5.0	100.0	101.3	−1.313	−1.313	506.6
3	10.0	100.0	101.3	−1.313	−1.313	1013.1
4	15.0	100.0	101.3	−1.313	−1.313	1519.7
5	52.0	100.0	96.0	4.009	4.009	5244.6
6	57.0	93.0	87.9	5.068	5.449	5706.9
7	61.0	86.0	76.7	9.295	10.808	6037.7
8	63.0	52.0	69.5	−17.515	−33.683	6184.0
9	71.0	43.0	37.5	5.518	12.832	6611.1
10	110.0	0.0	0.5	−0.491	0.000	6942.4
11	115.0	0.0	0.3	−0.306	0.000	6944.3
12	120.0	0.0	0.2	−0.195	0.000	6945.6
13	125.0	0.0	0.1	−0.129	0.000	6946.4
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.2					
F–stat	152.6					
Confidence	90.0					
A	0.0	C	67.6			
A StdErr	3.7	C StdErr	1.5			
A t	0.0	C t	45.0			
A ConfLimits	−6.8	C ConfLimits	64.9			
	6.8		70.4			
B	101.3	D	11.0			
B StdErr	5.2	D StdErr	2.5			
B t	19.5	D t	4.3			
B ConfLimits	91.8	D ConfLimits	6.3			
	110.8		15.7			

NEAR GUN 6, 2nd HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	0.3	99.743	99.743	0.0
2	5.0	100.0	100.9	−0.946	−0.946	504.7
3	10.0	100.0	100.9	−0.945	−0.945	1009.5
4	15.0	100.0	100.9	−0.945	−0.945	1514.2
5	47.0	97.0	85.1	11.876	12.243	4668.9
6	52.0	57.0	67.6	−10.608	−18.611	5053.7
7	57.0	43.0	46.0	−2.995	−6.964	5337.9
8	61.0	40.0	30.6	9.353	23.382	5490.0
9	63.0	22.0	24.5	−2.467	−11.215	5544.9
10	110.0	0.0	0.4	−0.403	0.000	5758.2
11	115.0	0.0	0.4	−0.353	0.000	5760.1
12	120.0	0.0	0.3	−0.320	0.000	5761.7
13	125.0	0.0	0.3	−0.300	0.000	5763.3
X@50Y	56.1					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.3					
F−stat	190.1					
Confidence	90.0					
A	100.9	C	55.9			
A StdErr	3.1	C StdErr	1.0			
A t	32.2	C t	54.8			
A ConfLimits	95.2	C ConfLimits	54.1			
	106.7		57.8			
B	−100.7	D	−9.7			
B StdErr	4.5	D StdErr	1.7			
B t	−22.3	D t	−5.7			
B ConfLimits	−109.0	D ConfLimits	−12.7			
	−92.4		−6.6			

NEAR GUN 6, 2nd HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	−0.2	100.176	100.176	0.0
2	5.0	100.0	100.6	−0.571	−0.571	502.9
3	10.0	100.0	100.6	−0.571	−0.571	1005.7
4	15.0	100.0	100.6	−0.570	−0.570	1508.6
5	47.0	94.0	86.1	7.853	8.355	4663.6
6	52.0	59.0	67.7	−8.692	−14.733	5051.8
7	57.0	42.0	44.1	−2.134	−5.081	5331.6
8	61.0	49.0	27.8	21.201	43.268	5474.0
9	63.0	5.0	21.5	−16.473	−329.466	5523.0
10	110.0	0.0	−0.1	0.098	0.000	5676.0
11	115.0	0.0	−0.1	0.128	0.000	5675.4
12	120.0	0.0	−0.1	0.145	0.000	5674.7
13	125.0	0.0	−0.2	0.156	0.000	5674.0
X@50Y	55.7					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	0.9					
r2	1.0					
Fit StdErr	9.8					
F−stat	80.7					
Confidence	90.0					
A	100.6	C	55.7			
A StdErr	4.8	C StdErr	1.5			
A t	20.7	C t	37.4			
A ConfLimits	91.7	C ConfLimits	53.0			
	109.5		58.4			
B	−100.7	D	−10.5			
B StdErr	7.0	D StdErr	2.8			
B t	−14.5	D t	−3.8			
B ConfLimits	−113.5	D ConfLimits	−15.6			
	−88.0		−5.5			

NEAR GUN 6, 2nd HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.7	0.265	0.265	0.0
2	5.0	100.0	99.7	0.265	0.265	498.7
3	10.0	100.0	99.7	0.265	0.265	997.4
4	15.0	100.0	99.7	0.265	0.265	1496.0
5	47.0	90.0	89.7	0.261	0.290	4646.6
6	52.0	70.0	75.7	−5.675	−8.107	5063.4
7	57.0	60.0	54.8	5.213	8.688	5391.6
8	61.0	45.0	36.6	8.382	18.627	5574.2
9	63.0	18.0	28.3	−10.307	−57.263	5638.9
10	110.0	0.0	−0.3	0.267	0.000	5780.7
11	115.0	0.0	−0.3	0.267	0.000	5779.4
12	120.0	0.0	−0.3	0.267	0.000	5778.1
13	125.0	0.0	−0.3	0.267	0.000	5776.7
X@50Y	58.0					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.1					
F−stat	289.6					
Confidence	90.0					
A	−0.3	C	58.1			
A StdErr	2.6	C StdErr	0.8			
A t	−0.1	C t	76.9			
A ConfLimits	−5.0	C ConfLimits	56.7			
	4.4		59.5			
B	100.0	D	−8.7			
B StdErr	3.6	D StdErr	1.2			
B t	27.7	D t	−7.1			
B ConfLimits	93.4	D ConfLimits	−10.9			
	106.6		−6.4			

NEAR GUN 6, 2nd HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.188	−0.188	0.0
2	5.0	100.0	100.2	−0.188	−0.188	500.9
3	10.0	100.0	100.2	−0.188	−0.188	1001.9
4	15.0	100.0	100.2	−0.188	−0.188	1502.8
5	47.0	97.0	94.5	2.497	2.575	4689.7
6	52.0	80.0	83.0	−3.020	−3.775	5137.3
7	57.0	64.0	62.5	1.523	2.380	5504.4
8	61.0	43.0	42.5	0.541	1.258	5714.5
9	63.0	32.0	32.8	−0.849	−2.654	5789.7
10	110.0	0.0	−0.0	0.015	0.000	5959.0
11	115.0	0.0	−0.0	0.015	0.000	5958.9
12	120.0	0.0	−0.0	0.015	0.000	5958.8
13	125.0	0.0	−0.0	0.015	0.000	5958.8
X@50Y	59.5					
Equation	y=a+b0.5(1+erf((x−c)/(Û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	1.4					
F−stat	3715.1					
Confidence	90.0					
A	−0.0	C	59.5			
A StdErr	0.7	C StdErr	0.2			
A t	−0.0	C t	301.1			
A ConfLimits	−1.3	C ConfLimits	59.1			
	1.3		59.8			
B	100.2	D	−7.9			
B StdErr	1.0	D StdErr	0.3			
B t	98.9	D t	−23.3			
B ConfLimits	98.3	D ConfLimits	−8.5			
	102.1		−7.3			

FAR GUN 60, 2nd HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.6	−0.595	−0.595	0.0
2	5.0	100.0	100.6	−0.595	−0.595	503.0
3	10.0	100.0	100.6	−0.595	−0.595	1006.0
4	15.0	100.0	100.6	−0.595	−0.595	1508.9
5	47.0	92.0	85.7	6.321	6.871	4657.4
6	52.0	65.0	68.7	−3.693	−5.682	5046.4
7	57.0	43.0	47.2	−4.201	−9.771	5336.5
8	61.0	35.0	31.6	3.377	9.650	5493.1
9	63.0	27.0	25.3	1.718	6.362	5549.8
10	110.0	0.0	0.3	−0.346	0.000	5767.6
11	115.0	0.0	0.3	−0.294	0.000	5769.2
12	120.0	0.0	0.3	−0.261	0.000	5770.6
13	125.0	0.0	0.2	−0.240	0.000	5771.8
X@50Y	56.3					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.1					
F–stat	779.4					
Confidence	90.0					
A	0.2	C	56.3			
A StdErr	1.6	C StdErr	0.5			
A t	0.1	C t	112.0			
A ConfLimits	−2.7	C ConfLimits	55.3			
	3.1		57.2			
B	100.4	D	9.7			
B StdErr	2.2	D StdErr	0.8			
B t	45.2	D t	11.5			
B ConfLimits	96.3	D ConfLimits	8.2			
	104.5		11.3			

FAR GUN 60, 2nd HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	101.3	–1.288	–1.288	0.0
2	5.0	100.0	101.3	–1.288	–1.288	506.4
3	10.0	100.0	101.3	–1.288	–1.288	1012.9
4	15.0	100.0	101.3	–1.288	–1.288	1519.3
5	47.0	100.0	89.3	10.655	10.655	4715.4
6	52.0	64.0	69.4	–5.445	–8.508	5117.5
7	57.0	36.0	42.2	–6.226	–17.295	5396.9
8	61.0	33.0	24.3	8.688	26.327	5527.8
9	63.0	18.0	17.9	0.073	0.408	5569.7
10	110.0	0.0	0.7	–0.659	0.000	5706.5
11	115.0	0.0	0.6	–0.650	0.000	5709.7
12	120.0	0.0	0.6	–0.644	0.000	5712.9
13	125.0	0.0	0.6	–0.641	0.000	5716.2
X@50Y	55.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.4					
F–stat	270.2					
Confidence	90.0					
A	0.6	C	55.4			
A StdErr	2.7	C StdErr	0.8			
A t	0.2	C t	73.6			
A ConfLimits	–4.3	C ConfLimits	54.0			
	5.6		56.8			
B	100.7	D	12.2			
B StdErr	3.8	D StdErr	1.7			
B t	26.2	D t	7.0			
B ConfLimits	93.6	D ConfLimits	9.0			
	107.7		15.4			

FAR GUN 60, 2nd HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	99.9	0.114	0.114	0.0
2	5.0		100.0	99.9	0.122	0.122	499.4
3	10.0		100.0	99.9	0.139	0.139	998.8
4	15.0		100.0	99.8	0.177	0.177	1498.0
5	47.0		90.0	89.7	0.276	0.306	4627.7
6	52.0		78.0	79.8	−1.820	−2.333	5053.9
7	57.0		62.0	64.1	−2.109	−3.402	5416.0
8	61.0		60.0	48.6	11.427	19.045	5641.8
9	63.0		32.0	40.7	−8.708	−27.213	5731.0
10	110.0		0.0	−0.1	0.074	0.000	6054.7
11	115.0		0.0	−0.1	0.095	0.000	6054.2
12	120.0		0.0	−0.1	0.104	0.000	6053.7
13	125.0		0.0	−0.1	0.109	0.000	6053.2
X@50Y	60.6						
Equation	y=a+b/(1 +exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	4.9						
F−stat	312.6						
Confidence	90.0						
A	−0.1	C		60.7			
A StdErr	2.4	C StdErr		0.9			
A t	−0.0	C t		70.9			
A ConfLimits	−4.6	C ConfLimits		59.1			
	4.4			62.2			
B	100.0	D		−6.3			
B StdErr	3.5	D StdErr		1.1			
B t	28.9	D t		−6.0			
B ConfLimits	93.7	D ConfLimits		−8.2			
	106.3			−4.3			

FAR GUN 60, 2nd HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.216	−0.216	0.0
2	5.0	100.0	100.2	−0.216	−0.216	501.1
3	10.0	100.0	100.2	−0.216	−0.216	1002.2
4	15.0	100.0	100.2	−0.215	−0.215	1503.2
5	47.0	98.0	92.8	5.194	5.300	4674.9
6	52.0	77.0	83.8	−6.756	−8.774	5118.4
7	57.0	68.0	69.5	−1.549	−2.278	5503.8
8	61.0	68.0	55.3	12.662	18.620	5754.1
9	63.0	39.0	47.8	−8.837	−22.659	5857.3
10	110.0	0.0	−0.0	0.037	0.000	6251.7
11	115.0	0.0	−0.0	0.037	0.000	6251.6
12	120.0	0.0	−0.0	0.037	0.000	6251.4
13	125.0	0.0	−0.0	0.037	0.000	6251.2

X@50Y	62.4		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	5.9		
F−stat	217.3		
Confidence	90.0		
A	−0.0	C	62.4
A StdErr	3.0	C StdErr	1.2
A t	−0.0	C t	51.4
A ConfLimits	−5.4	C ConfLimits	60.2
	5.4		64.6
B	100.3	D	−10.6
B StdErr	4.2	D StdErr	2.3
B t	24.1	D t	−4.6
B ConfLimits	92.6	D ConfLimits	−14.9
	107.9		−6.4

LEOPARD II, 2nd HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.053	−0.053	0.0
2	5.0	100.0	100.1	−0.053	−0.053	500.3
3	10.0	100.0	100.1	−0.053	−0.053	1000.5
4	15.0	100.0	100.1	−0.053	−0.053	1500.8
5	52.0	89.0	90.4	−1.373	−1.542	5147.1
6	57.0	81.0	81.1	−0.100	−0.124	5577.6
7	61.0	88.0	70.6	17.350	19.716	5881.9
8	63.0	46.0	64.6	−18.639	−40.520	6017.3
9	71.0	43.0	39.6	3.361	7.816	6433.3
10	110.0	0.0	0.7	−0.701	0.000	6873.6
11	115.0	0.0	0.2	−0.196	0.000	6875.8
12	120.0	0.0	−0.1	0.141	0.000	6875.9
13	125.0	0.0	−0.4	0.369	0.000	6874.6
X@50Y	67.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	8.6					
F–stat	102.4					
Confidence	90.0					
A	−0.9	C	67.7			
A StdErr	4.8	C StdErr	2.3			
A t	−0.2	C t	28.9			
A ConfLimits	−9.8	C ConfLimits	63.4			
	7.9		72.0			
B	101.0	D	8.5			
B StdErr	6.7	D StdErr	2.5			
B t	15.1	D t	3.4			
B ConfLimits	88.7	D ConfLimits	3.9			
	113.2		13.1			

LEOPARD II, 2nd HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.7	0.252	0.252	0.0
2	5.0	100.0	99.7	0.255	0.255	498.7
3	10.0	100.0	99.7	0.263	0.263	997.4
4	15.0	100.0	99.7	0.279	0.279	1496.1
5	52.0	85.0	91.4	−6.426	−7.559	5130.9
6	57.0	91.0	83.3	7.693	8.454	5569.7
7	61.0	77.0	73.0	4.006	5.202	5883.5
8	63.0	59.0	66.5	−7.522	−12.749	6023.2
9	7[illegible].0	38.0	36.6	1.365	3.591	6436.7
10	110.0	0.0	0.1	−0.118	0.000	6730.3
11	115.0	0.0	0.0	−0.044	0.000	6730.6
12	120.0	0.0	0.0	−0.009	0.000	6730.8
13	125.0	0.0	−0.0	0.007	0.000	6730.8

X@50Y	67.4		
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	4.4		
F−stat	392.3		
Confidence	90.0		
A	−0.0	C	67.5
A StdErr	2.2	C StdErr	0.9
A t	−0.0	C t	71.6
A ConfLimits	−4.1	C ConfLimits	65.8
	4.0		69.2
B	99.8	D	−6.5
B StdErr	3.1	D StdErr	0.9
B t	31.9	D t	−7.1
B ConfLimits	94.0	D ConfLimits	−8.1
	105.5		−4.8

LEOPARD II, 2nd HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.382	−0.382	0.0
2	5.0	100.0	100.4	−0.382	−0.382	501.9
3	10.0	100.0	100.4	−0.382	−0.382	1003.8
4	15.0	100.0	100.4	−0.380	−0.380	1505.7
5	52.0	88.0	84.2	3.779	4.294	5109.1
6	57.0	71.0	73.1	−2.109	−2.971	5503.8
7	61.0	78.0	62.3	15.667	20.085	5775.1
8	63.0	35.0	56.6	−21.649	−61.854	5894.0
9	71.0	42.0	35.2	6.835	16.275	6258.7
10	110.0	0.0	1.0	−1.032	0.000	6689.9
11	115.0	0.0	0.4	−0.395	0.000	6693.4
12	120.0	0.0	−0.1	0.055	0.000	6694.2
13	125.0	0.0	−0.4	0.377	0.000	6693.1
X@50Y	65.3					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	0.9					
r2	1.0					
Fit StdErr	9.3					
F–stat	83.9					
Confidence	90.0					
A	−1.3	C	65.5			
A StdErr	5.7	C StdErr	2.6			
A t	−0.2	C t	24.9			
A ConfLimits	−11.7	C ConfLimits	60.7			
	9.0		70.3			
B	101.7	D	7.2			
B StdErr	7.6	D StdErr	2.4			
B t	13.4	D t	3.1			
B ConfLimits	87.7	D ConfLimits	2.9			
	115.7		11.5			

LEOPARD II, 2nd HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.400	−0.400	0.0
2	5.0	100.0	100.4	−0.400	−0.400	502.0
3	10.0	100.0	100.4	−0.400	−0.400	1004.0
4	15.0	100.0	100.4	−0.400	−0.400	1506.0
5	52.0	93.0	93.9	−0.934	−1.005	5192.0
6	57.0	89.0	84.4	4.632	5.204	5640.6
7	61.0	80.0	71.6	8.404	10.505	5954.0
8	63.0	50.0	63.8	−13.754	−27.508	6089.5
9	71.0	36.0	31.8	4.184	11.623	6467.7
10	110.0	0.0	0.4	−0.394	0.000	6737.1
11	115.0	0.0	0.3	−0.252	0.000	6738.7
12	120.0	0.0	0.2	−0.168	0.000	6739.7
13	125.0	0.0	0.1	−0.117	0.000	6740.4
X@50Y	66.3					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.8					
F–stat	233.8					
Confidence	90.0					
A	0.0	C	66.2			
A StdErr	2.9	C StdErr	1.1			
A t	0.0	C t	59.6			
A ConfLimits	−5.4	C ConfLimits	64.2			
	5.4		68.3			
B	100.4	D	11.1			
B StdErr	4.1	D StdErr	2.0			
B t	24.3	D t	5.6			
B ConfLimits	92.8	D ConfLimits	7.4			
	107.9		14.7			

MARDER, 2nd HALF–VEHICLE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.3	−0.308	−0.308	0.0
2	5.0	100.0	100.3	−0.308	−0.308	501.5
3	10.0	100.0	100.3	−0.308	−0.308	1003.1
4	15.0	100.0	100.3	−0.308	−0.308	1504.6
5	47.0	97.0	92.7	4.345	4.480	4685.7
6	52.0	76.0	80.0	−3.992	−5.253	5120.9
7	57.0	56.0	59.5	−3.458	−6.176	5472.2
8	61.0	54.0	40.5	13.511	25.020	5672.1
9	63.0	22.0	31.5	−9.540	−43.363	5744.0
10	110.0	0.0	−0.1	0.092	0.000	5910.6
11	115.0	0.0	−0.1	0.092	0.000	5910.1
12	120.0	0.0	−0.1	0.092	0.000	5909.7
13	125.0	0.0	−0.1	0.092	0.000	5909.2
X@50Y	59.0					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.0					
F−stat	216.7					
Confidence	90.0					
A	−0.1	C	59.0			
A StdErr	3.0	C StdErr	0.9			
A t	−0.0	C t	69.2			
A ConfLimits	−5.6	C ConfLimits	57.4			
	5.4		60.5			
B	100.4	D	−8.4			
B StdErr	4.2	D StdErr	1.4			
B t	23.9	D t	−5.9			
B ConfLimits	92.7	D ConfLimits	−11.0			
	108.1		−5.8			

MARDER, 2nd HALF–VEHICLE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.1	0.881	0.881	0.0
2	5.0	100.0	99.1	0.881	0.881	495.6
3	10.0	100.0	99.1	0.881	0.881	991.2
4	15.0	100.0	99.1	0.882	0.882	1486.8
5	47.0	97.0	95.3	1.664	1.716	4644.1
6	52.0	76.0	86.1	−10.134	−13.335	5102.0
7	57.0	68.0	63.0	5.015	7.376	5481.6
8	61.0	47.0	37.0	10.002	21.281	5681.7
9	63.0	13.0	25.5	−12.522	−96.320	5743.9
10	110.0	0.0	−0.6	0.612	0.000	5828.7
11	115.0	0.0	−0.6	0.612	0.000	5825.4
12	120.0	0.0	−0.6	0.612	0.000	5822.8
13	125.0	0.0	−0.6	0.612	0.000	5819.7

X@50Y	59.0		
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	6.6		
F−stat	183.6		
Confidence	90.0		
A	99.1	C	59.1
A StdErr	3.1	C StdErr	0.8
A t	31.8	C t	78.2
A ConfLimits	93.4	C ConfLimits	57.7
	104.8		60.5
B	−99.7	D	3.7
B StdErr	4.6	D StdErr	0.7
B t	−21.8	D t	5.0
B ConfLimits	−108.1	D ConfLimits	2.4
	−91.3		5.1

MARDER, 2nd HALF–VEHICLE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	97.8	2.206	2.206	0.0
2	5.0	100.0	97.8	2.206	2.206	489.0
3	10.0	100.0	97.8	2.206	2.206	977.9
4	15.0	100.0	97.8	2.207	2.207	1466.9
5	47.0	85.0	93.6	−8.615	−10.135	4579.7
6	52.0	80.0	84.2	−4.165	−5.206	5028.3
7	57.0	65.0	61.6	3.445	5.300	5398.8
8	61.0	50.0	36.7	13.268	26.535	5595.5
9	63.0	10.0	25.7	−15.697	−156.968	5657.6
10	110.0	0.0	−0.7	0.734	0.000	5742.6
11	115.0	0.0	−0.7	0.735	0.000	5738.7
12	120.0	0.0	−0.7	0.735	0.000	5735.4
13	125.0	0.0	−0.7	0.735	0.000	5731.7
X@50Y	58.9					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.8					
F−stat	127.6					
Confidence	90.0					
A	97.8	C	59.1			
A StdErr	3.7	C StdErr	0.9			
A t	26.4	C t	63.7			
A ConfLimits	91.0	C ConfLimits	57.4			
	104.6		60.8			
B	−98.5	D	3.9			
B StdErr	5.4	D StdErr	0.9			
B t	−18.2	D t	4.2			
B ConfLimits	−108.5	D ConfLimits	2.2			
	−88.6		5.6			

MARDER, 2nd HALF–VEHICLE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.7	0.348	0.348	0.0
2	5.0	100.0	99.7	0.348	0.348	498.3
3	10.0	100.0	99.7	0.348	0.348	996.5
4	15.0	100.0	99.7	0.348	0.348	1494.8
5	47.0	94.0	97.2	−3.202	−3.406	4677.6
6	52.0	93.0	88.1	4.853	5.218	5145.4
7	57.0	57.0	66.4	−9.362	−16.425	5537.2
8	61.0	59.0	42.4	16.572	28.089	5755.4
9	63.0	20.0	30.9	−10.905	−54.524	5828.5
10	110.0	0.0	−0.2	0.163	0.000	5950.8
11	115.0	0.0	−0.2	0.163	0.000	5950.0
12	120.0	0.0	−0.2	0.163	0.000	5949.2
13	125.0	0.0	−0.2	0.163	0.000	5948.4
X@50Y	59.8					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.6					
F−stat	139.0					
Confidence	90.0					
A	99.7	C	59.8			
A StdErr	3.6	C StdErr	0.9			
A t	27.9	C t	67.4			
A ConfLimits	93.1	C ConfLimits	58.2			
	106.2		61.4			
B	−99.8	D	6.5			
B StdErr	5.2	D StdErr	1.5			
B t	−19.1	D t	4.3			
B ConfLimits	−109.4	D ConfLimits	3.7			
	−90.2		9.3			

NEAR GUN 60, 2nd HALF–NOISE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	101.1	−1.121	−1.121	0.0
2	5.0	100.0	101.1	−1.121	−1.121	505.6
3	10.0	100.0	101.1	−1.121	−1.121	1011.2
4	15.0	100.0	101.1	−1.121	−1.121	1516.8
5	55.0	100.0	98.1	1.939	1.939	5548.4
6	60.0	100.0	93.4	6.589	6.589	6028.5
7	65.0	85.0	84.7	0.300	0.353	6475.7
8	70.0	65.0	71.3	−6.280	−9.662	6867.5
9	75.0	51.0	54.3	−3.282	−6.435	7182.4
10	80.0	45.0	36.6	8.422	18.716	7409.1
11	85.0	19.0	21.4	−2.417	−12.720	7552.5
12	90.0	10.0	10.7	−0.741	−7.411	7630.9
13	110.0	0.0	0.1	−0.096	0.000	7687.8
14	115.0	0.0	−0.0	0.002	0.000	7688.0
15	120.0	0.0	−0.0	0.023	0.000	7687.9
16	125.0	0.0	−0.0	0.027	0.000	7687.8
X@50Y	77.4					
Equation	y=a+b0.5(1+erf((x−c)/(02d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.9					
F−stat	634.0					
Confidence	90.0					
A	−0.0	C	76.0			
A StdErr	1.9	C StdErr	0.7			
A t	−0.0	C t	105.9			
A ConfLimits	−3.4	C ConfLimits	74.8			
	3.4		77.3			
B	101.1	D	−11.2			
B StdErr	2.7	D StdErr	1.0			
B t	37.6	D t	−11.8			
B ConfLimits	96.3	D ConfLimits	−12.9			
	105.9		−9.5			

NEAR GUN 60, 2nd HALF–NOISE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	97.2	2.846	2.846	0.0
2	5.0	100.0	97.2	2.846	2.846	485.8
3	10.0	100.0	97.2	2.846	2.846	971.5
4	15.0	100.0	97.2	2.846	2.846	1457.3
5	65.0	96.0	93.0	2.993	3.118	6294.8
6	70.0	74.0	86.2	−12.186	−16.467	6745.3
7	75.0	77.0	71.2	5.764	7.486	7143.0
8	80.0	54.0	47.5	6.503	12.042	7442.3
9	85.0	21.0	24.0	−2.997	−14.273	7618.4
10	90.0	0.0	9.4	−9.438	0.000	7697.9
11	110.0	0.0	−0.9	0.950	0.000	7727.8
12	115.0	0.0	−1.1	1.066	0.000	7722.7
13	120.0	0.0	−1.1	1.107	0.000	7717.2
14	125.0	0.0	−1.1	1.121	0.000	7711.6
X@50Y	79.3					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.5					
F−stat	109.0					
Confidence	90.0					
A	−1.1					
A StdErr	2.8					
A t	−0.4					
A ConfLimits	−6.2					
	4.0					
B	98.3					
B StdErr	4.0					
B t	24.6					
B ConfLimits	91.1					
	105.5					

NEAR GUN 60, 2nd HALF–NOISE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	96.4	3.597	3.597	0.0
2	5.0	100.0	96.4	3.597	3.597	482.0
3	10.0	100.0	96.4	3.599	3.599	964.0
4	15.0	100.0	96.4	3.603	3.603	1446.0
5	55.0	85.0	94.0	−8.968	−10.550	5285.4
6	60.0	95.0	91.5	3.522	3.707	5749.7
7	65.0	67.0	86.7	−19.701	−29.404	6196.3
8	70.0	85.0	78.2	6.807	8.008	6610.4
9	75.0	68.0	64.9	3.123	4.592	6970.1
10	80.0	50.0	47.7	2.268	4.537	7252.7
11	85.0	40.0	30.5	9.548	23.869	7447.2
12	90.0	0.0	16.8	−16.846	0.000	7563.5
13	110.0	0.0	−0.8	0.790	0.000	7657.8
14	115.0	0.0	−1.4	1.429	0.000	7652.0
15	120.0	0.0	−1.7	1.741	0.000	7644.0
16	125.0	0.0	−1.9	1.891	0.000	7634.9
X@50Y	82.2					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	9.0					
F−stat	107.1					
Confidence	90.0					
A	−2.0	C	80.2			
A StdErr	4.8	C StdErr	1.8			
A t	−0.4	C t	45.8			
A ConfLimits	−10.5	C ConfLimits	77.0			
	6.4		83.3			
B	98.4	D	−6.8			
B StdErr	6.5	D StdErr	1.6			
B t	15.1	D t	−4.3			
B ConfLimits	86.8	D ConfLimits	−9.7			
	110.1		−4.0			

NEAR GUN 60, 2nd HALF−NOISE CONTROLS−D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.5	0.467	0.467	0.0
2	5.0	100.0	99.4	0.594	0.594	497.4
3	10.0	100.0	99.2	0.782	0.782	994.0
4	15.0	100.0	98.9	1.058	1.058	1489.4
5	55.0	80.0	83.0	−3.049	−3.812	5259.7
6	60.0	65.0	76.8	−11.779	−18.121	5659.9
7	65.0	75.0	69.0	6.011	8.014	6024.9
8	70.0	73.0	59.9	13.138	17.997	6347.5
9	75.0	45.0	49.9	−4.873	−10.829	6622.1
10	80.0	43.0	39.7	3.274	7.615	6846.0
11	85.0	21.0	30.2	−9.167	−43.655	7020.3
12	90.0	25.0	21.8	3.216	12.863	7149.6
13	110.0	0.0	2.5	−2.480	0.000	7357.1
14	115.0	0.0	0.4	−0.382	0.000	7363.9
15	120.0	0.0	−1.1	1.087	0.000	7361.9
16	125.0	0.0	−2.1	2.104	0.000	7353.8
X@50Y	78.4					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.5					
F−stat	186.2					
Confidence	90.0					
A	−4.3	C	76.0			
A StdErr	4.9	C StdErr	2.2			
A t	−0.9	C t	35.2			
A ConfLimits	−12.9	C ConfLimits	72.2			
	4.4		79.9			
B	104.1	D	−12.7			
B StdErr	6.5	D StdErr	2.2			
B t	16.1	D t	−5.7			
B ConfLimits	92.6	D ConfLimits	−16.7			
	115.6		−8.8			

LEOPARD II, 2nd HALF–NOISE CONTROLS–A

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.2	−0.243	−0.243	0.0
2	5.0		100.0	100.2	−0.239	−0.239	501.2
3	10.0		100.0	100.2	−0.228	−0.228	1002.4
4	15.0		100.0	100.2	−0.195	−0.195	1503.5
5	55.0		100.0	82.3	17.733	17.733	5349.6
6	60.0		40.0	73.4	−33.428	−83.569	5739.6
7	65.0		82.0	62.8	19.200	23.415	6080.8
8	70.0		46.0	51.1	−5.091	−11.067	6365.8
9	75.0		43.0	39.3	3.730	8.675	6591.6
10	80.0		31.0	28.3	2.665	8.598	6760.0
11	85.0		16.0	19.1	−3.065	−19.158	6877.7
12	90.0		10.0	11.9	−1.865	−18.653	6954.1
13	110.0		0.0	0.3	−0.308	0.000	7040.0
14	115.0		0.0	−0.2	0.241	0.000	7040.0
15	120.0		0.0	−0.5	0.493	0.000	7038.1
16	125.0		0.0	−0.6	0.599	0.000	7035.3
X@50Y	73.6						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	0.9						
r2	0.9						
Fit StdErr	12.5						
F−stat	53.5						
Confidence	90.0						
A	−0.7	C		70.5			
A StdErr	6.6	C StdErr		3.2			
A t	−0.1	C t		22.2			
A ConfLimits	−12.4	C ConfLimits		64.9			
	11.1			76.2			
B	100.9	D		−16.9			
B StdErr	9.2	D StdErr		4.6			
B t	10.9	D t		−3.7			
B ConfLimits	84.5	D ConfLimits		−25.0			
	117.3			−8.7			

LEOPARD II, 2nd HALF–NOISE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	98.4	1.576	1.576	0.0
2	5.0	100.0	98.4	1.576	1.576	492.1
3	10.0	100.0	98.4	1.577	1.577	984.2
4	15.0	100.0	98.4	1.577	1.577	1476.4
5	55.0	100.0	97.0	3.028	3.028	5405.4
6	60.0	90.0	94.9	–4.860	–5.400	5885.7
7	65.0	84.0	89.9	–5.938	–7.069	6349.3
8	70.0	79.0	79.5	–0.544	–0.689	6776.0
9	75.0	58.0	61.5	–3.535	–6.095	7131.8
10	80.0	54.0	38.9	15.096	27.955	7383.2
11	85.0	11.0	19.6	–8.640	–78.542	7526.7
12	90.0	0.0	8.0	–7.970	0.000	7592.7
13	110.0	0.0	–1.6	1.601	0.000	7610.0
14	115.0	0.0	–1.8	1.766	0.000	7601.5
15	120.0	0.0	–1.8	1.832	0.000	7592.5
16	125.0	0.0	–1.9	1.858	0.000	7583.3
X@50Y	79.2					
Equation	y=a+b/(1+exp(–(x–c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.3					
F–stat	250.3					
Confidence	90.0					
A	–1.9	C	77.9			
A StdErr	3.1	C StdErr	1.0			
A t	–0.6	C t	77.8			
A ConfLimits	–7.4	C ConfLimits	76.2			
	3.6		79.7			
B	100.3	D	–5.4			
B StdErr	4.3	D StdErr	0.9			
B t	23.5	D t	–6.3			
B ConfLimits	92.7	D ConfLimits	–7.0			
	107.9		–3.9			

LEOPARD II, 2nd HALF—NOISE CONTROLS—C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.8	0.152	0.152	0.0
2	5.0	100.0	99.8	0.152	0.152	499.2
3	10.0	100.0	99.8	0.152	0.152	998.5
4	15.0	100.0	99.8	0.152	0.152	1497.7
5	55.0	95.0	92.5	2.522	2.654	5448.3
6	60.0	80.0	85.6	−5.598	−6.997	5894.8
7	65.0	77.0	75.3	1.687	2.191	6298.5
8	70.0	62.0	62.0	0.024	0.039	6642.8
9	75.0	48.0	47.0	1.032	2.151	6915.5
10	80.0	30.0	32.3	−2.314	−7.712	7113.1
11	85.0	30.0	19.9	10.101	33.671	7242.4
12	90.0	0.0	10.8	−10.773	0.000	7317.6
13	110.0	0.0	−0.5	0.461	0.000	7374.8
14	115.0	0.0	−0.7	0.694	0.000	7371.8
15	120.0	0.0	−0.8	0.767	0.000	7368.1
16	125.0	0.0	−0.8	0.787	0.000	7364.2
X@50Y	78.5					
Equation	y=a+b0.5(1+erf((x−c)/(02d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.7					
F−stat	401.5					
Confidence	90.0					
A	−0.8	C	74.2			
A StdErr	2.4	C StdErr	1.0			
A t	−0.3	C t	74.6			
A ConfLimits	−5.0	C ConfLimits	72.4			
	3.4		75.9			
B	100.6	D	−13.2			
B StdErr	3.4	D StdErr	1.3			
B t	29.9	D t	−10.0			
B ConfLimits	94.6	D ConfLimits	−15.5			
	106.6		−10.8			

LEOPARD II, 2nd HALF–NOISE CONTROLS–D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	101.6	−1.586	−1.586	0.0
2	5.0	100.0	100.5	−0.479	−0.479	505.3
3	10.0	100.0	99.1	0.941	0.941	1004.3
4	15.0	100.0	97.3	2.725	2.725	1495.3
5	55.0	70.0	65.7	4.253	6.076	4862.4
6	60.0	45.0	59.8	−14.769	−32.821	5176.3
7	65.0	46.0	53.5	−7.549	−16.412	5459.7
8	70.0	57.0	47.2	9.802	17.196	5711.6
9	75.0	43.0	40.8	2.165	5.035	5931.7
10	80.0	54.0	34.6	19.422	35.967	6120.1
11	85.0	29.0	28.5	0.458	1.580	6277.8
12	90.0	8.0	22.8	−14.827	−185.337	6406.1
13	110.0	0.0	4.5	−4.550	0.000	6666.4
14	115.0	0.0	1.3	−1.277	0.000	6680.8
15	120.0	0.0	−1.5	1.489	0.000	6680.0
16	125.0	0.0	−3.8	3.783	0.000	6666.7
X@50Y	75.2					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	0.9					
r2	1.0					
Fit StdErr	9.3					
F−stat	82.9					
Confidence	90.0					
A	−11.6	C	70.5			
A StdErr	17.5	C StdErr	6.5			
A t	−0.7	C t	10.9			
A ConfLimits	−42.8	C ConfLimits	59.0			
	19.7		82.1			
B	116.2	D	−36.3			
B StdErr	25.7	D StdErr	15.7			
B t	4.5	D t	−2.3			
B ConfLimits	70.4	D ConfLimits	−64.4			
	161.9		−8.3			

VEHICLE 2, 2nd HALF–NOISE CONTROLS–A

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	101.3	−1.253	−1.253	0.0
2	5.0	100.0	101.3	−1.253	−1.253	506.3
3	10.0	100.0	101.3	−1.253	−1.253	1012.5
4	15.0	100.0	101.3	−1.253	−1.253	1518.8
5	55.0	100.0	98.9	1.128	1.128	5559.7
6	60.0	100.0	94.0	6.023	6.023	6043.8
7	65.0	81.0	82.5	−1.542	−1.904	6488.5
8	70.0	65.0	62.8	2.219	3.414	6854.9
9	75.0	30.0	39.8	−9.768	−32.558	7110.7
10	80.0	30.0	21.7	8.327	27.757	7261.2
11	85.0	16.0	10.9	5.067	31.671	7339.9
12	90.0	0.0	5.4	−5.418	0.000	7379.2
13	110.0	0.0	0.4	−0.443	0.000	7417.0
14	115.0	0.0	0.3	−0.272	0.000	7418.7
15	120.0	0.0	0.2	−0.181	0.000	7419.8
16	125.0	0.0	0.1	−0.131	0.000	7420.6
X@50Y	74.5					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.8					
F–stat	447.5					
Confidence	90.0					
A	0.1	C	72.6			
A StdErr	2.3	C StdErr	0.8			
A t	0.0	C t	95.9			
A ConfLimits	−4.1	C ConfLimits	71.2			
	4.2		73.9			
B	101.2	D	13.4			
B StdErr	3.3	D StdErr	1.6			
B t	30.7	D t	8.4			
B ConfLimits	95.3	D ConfLimits	10.6			
	107.1		16.3			

VEHICLE 2, 2nd HALF–NOISE CONTROLS–B

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.2	0.761	0.761	0.0
2	5.0	100.0	98.9	1.088	1.088	495.4
3	10.0	100.0	98.5	1.532	1.532	988.9
4	15.0	100.0	97.9	2.131	2.131	1479.8
5	55.0	60.0	77.9	−17.882	−29.803	5122.2
6	60.0	70.0	71.9	−1.866	−2.666	5497.0
7	65.0	66.0	64.9	1.117	1.693	5839.2
8	70.0	69.0	57.1	11.909	17.260	6144.5
9	75.0	62.0	48.8	13.229	21.337	6409.3
10	80.0	38.0	40.3	−2.294	−6.037	6631.9
11	85.0	34.0	32.1	1.939	5.703	6812.6
12	90.0	10.0	24.4	−14.427	−144.272	6953.5
13	110.0	0.0	3.2	−3.208	0.000	7203.8
14	115.0	0.0	0.2	−0.173	0.000	7212.0
15	120.0	0.0	−2.2	2.175	0.000	7206.7
16	125.0	0.0	−4.0	3.967	0.000	7191.2
X@50Y	77.4					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	0.9					
r2	1.0					
Fit StdErr	8.7					
F–stat	99.6					
Confidence	90.0					
A	−9.2	C	76.9			
A StdErr	9.6	C StdErr	4.0			
A t	−1.0	C t	19.0			
A ConfLimits	−26.4	C ConfLimits	69.7			
	7.9		84.2			
B	109.4	D	−16.1			
B StdErr	12.5	D StdErr	4.5			
B t	8.8	D t	−3.6			
B ConfLimits	87.1	D ConfLimits	−24.0			
	131.6		−8.1			

VEHICLE 2, 2nd HALF–NOISE CONTROLS–C

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.6	0.378	0.378	0.0
2	5.0	100.0	99.6	0.437	0.437	498.0
3	10.0	100.0	99.5	0.528	0.528	995.6
4	15.0	100.0	99.3	0.668	0.668	1492.6
5	55.0	90.0	88.2	1.769	1.966	5346.2
6	60.0	75.0	83.0	−7.983	−10.64[illegible]	5774.9
7	65.0	77.0	76.0	1.043	1.354	6173.0
8	70.0	68.0	67.1	0.911	1.340	6531.4
9	75.0	58.0	56.7	1.308	2.255	6841.3
10	80.0	50.0	45.5	4.494	8.987	7097.0
11	85.0	35.0	34.5	0.467	1.336	7296.8
12	90.0	20.0	24.7	−4.699	−23.493	7444.2
13	110.0	0.0	2.5	−2.483	0.000	7672.5
14	115.0	0.0	0.3	−0.268	0.000	7679.0
15	120.0	0.0	−1.2	1.221	0.000	7676.4
16	125.0	0.0	−2.2	2.210	0.000	7667.6
X@50Y	81.1					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.2					
F−stat	758.3					
Confidence	90.0					
A	−4.1	C	79.0			
A StdErr	2.3	C StdErr	1.0			
A t	−1.7	C t	78.2			
A ConfLimits	−8.2	C ConfLimits	77.2			
	0.1		80.8			
B	103.8	D	−11.5			
B StdErr	3.1	D StdErr	1.0			
B t	33.4	D t	−11.7			
B ConfLimits	98.3	D ConfLimits	−13.3			
	109.3		−9.8			

VEHICLE 2, 2nd HALF-NOISE CONTROLS-D

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	-0.380	-0.380	0.0
2	5.0	100.0	100.1	-0.057	-0.057	501.2
3	10.0	100.0	99.5	0.460	0.460	1000.2
4	15.0	100.0	98.7	1.257	1.257	1496.1
5	55.0	65.0	69.0	-4.015	-6.177	5023.2
6	60.0	55.0	61.6	-6.639	-12.072	5350.1
7	65.0	59.0	53.8	5.204	8.820	5638.9
8	70.0	52.0	45.8	6.240	11.999	5887.8
9	75.0	39.0	37.8	1.173	3.007	6096.6
10	80.0	33.0	30.3	2.718	8.237	6266.7
11	85.0	25.0	23.4	1.634	6.534	6400.5
12	90.0	8.0	17.3	-9.260	-115.750	6501.7
13	110.0	0.0	1.9	-1.881	0.000	6669.7
14	115.0	0.0	0.0	-0.003	0.000	6674.1
15	120.0	0.0	-1.3	1.323	0.000	6670.6
16	125.0	0.0	-2.2	2.226	0.000	6661.6

X@50Y	74.4		
Equation	y=a+b0.5(1+erf((x-c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	4.4		
F-stat	384.5		
Confidence	90.0		
A	-3.7	C	68.3
A StdErr	3.5	C StdErr	1.8
A t	-1.0	C t	38.9
A ConfLimits	-10.0	C ConfLimits	65.1
	2.6		71.4
B	104.5	D	-25.9
B StdErr	4.9	D StdErr	3.5
B t	21.2	D t	-7.4
B ConfLimits	95.7	D ConfLimits	-32.1
	113.3		-19.6

NEAR GUN 60, OUTDOOR–VEHICLE CONTROL–7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.6	0.385	0.385	0.0
2	5.0	100.0	99.6	0.385	0.385	498.1
3	10.0	100.0	99.6	0.386	0.386	996.1
4	15.0	100.0	99.6	0.387	0.387	1494.2
5	67.0	92.0	93.9	−1.931	−2.099	6634.1
6	72.0	83.0	88.5	−5.515	−6.644	7091.6
7	74.0	92.0	85.3	6.705	7.288	7265.5
8	81.0	67.0	67.9	−0.901	−1.345	7807.4
9	91.0	33.0	32.7	0.296	0.898	8311.5
10	110.0	0.0	1.7	−1.740	0.000	8548.8
11	115.0	0.0	0.1	−0.142	0.000	8553.1
12	120.0	0.0	−0.6	0.649	0.000	8551.6
13	125.0	0.0	−1.0	1.035	0.000	8547.2
X@50Y	86.1					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.1					
F−stat	847.7					
Confidence	90.0					
A	−1.4	C	86.4			
A StdErr	1.8	C StdErr	0.8			
A t	−0.8	C t	110.6			
A ConfLimits	−4.7	C ConfLimits	84.9			
	1.9		87.8			
B	101.0	D	−6.9			
B StdErr	2.4	D StdErr	0.6			
B t	41.3	D t	−10.7			
B ConfLimits	96.5	D ConfLimits	−8.1			
	105.5		−5.7			

NEAR GUN 60, OUTDOOR–VEHICLE CONTROL–8

XY Pt #	CONTROL ASEL	‿RCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	110.5	–10.507	–10.507	0.0
2	5.0	100.0	110.3	–10.323	–10.323	552.1
3	10.0	100.0	110.1	–10.064	–10.064	1103.1
4	15.0	100.0	109.7	–9.701	–9.701	1652.6
5	67.0	100.0	78.4	21.627	21.627	6884.8
6	72.0	100.0	69.7	30.289	30.289	7255.4
7	74.0	90.0	66.0	24.036	26.707	7391.1
8	81.0	50.0	52.1	–2.097	–4.194	7804.8
9	91.0	10.0	32.7	–22.664	–226.644	8226.8
10	110.0	0.0	7.4	–7.400	0.000	8578.2
11	115.0	0.0	3.7	–3.651	0.000	8605.4
12	120.0	0.0	0.8	–0.822	0.000	8616.2
13	125.0	0.0	–1.3	1.279	0.000	8614.8
X@50Y	82.0					
Equation	y=a+b/(1+exp(–(x–c)/d)) [Sigmoid]					
Adjr2	0.8					
r2	0.9					
Fit StdErr	18.1					
F–stat	24.8					
Confidence	90.0					
A	111.0					
A StdErr	8.0					
A t	13.9					
A ConfLimits	96.3					
	125.6					
B	–117.7					
B StdErr	13.7					
B t	–8.6					
B ConfLimits	–142.8					
	–92.7					

NEAR GUN 60, OUTDOOR–VEHICLE CONTROL–9

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.050	0.050	0.0
2	5.0	100.0	100.0	0.050	0.050	499.8
3	10.0	100.0	100.0	0.050	0.050	999.5
4	15.0	100.0	100.0	0.050	0.050	1499.3
5	67.0	100.0	96.2	3.767	3.767	6679.5
6	72.0	82.0	91.1	−9.119	−11.121	7149.3
7	74.0	92.0	88.0	3.993	4.341	7328.6
8	81.0	73.0	71.5	1.474	2.019	7892.0
9	91.0	38.0	38.1	−0.105	−0.276	8443.5
10	110.0	0.0	1.8	−1.768	0.000	8730.8
11	115.0	0.0	−0.0	0.018	0.000	8734.5
12	120.0	0.0	−0.7	0.671	0.000	8732.5
13	125.0	0.0	−0.9	0.870	0.000	8728.5
X@50Y	87.5					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.6					
F−stat	611.9					
Confidence	90.0					
A	−0.9	C	87.7			
A StdErr	2.1	C StdErr	1.0			
A t	−0.5	C t	90.8			
A ConfLimits	−4.7	C ConfLimits	85.9			
	2.9		89.4			
B	100.9	D	−11.6			
B StdErr	2.8	D StdErr	1.3			
B t	35.5	D t	−9.1			
B ConfLimits	95.7	D ConfLimits	−13.9			
	106.1		−9.2			

NEAR GUN 60, OUTDOOR–VEHICLE CONTROL–10

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.3	−0.347	−0.347	0.0
2	5.0		100.0	100.3	−0.347	−0.347	501.7
3	10.0		100.0	100.3	−0.347	−0.347	1003.5
4	15.0		100.0	100.3	−0.347	−0.347	1505.2
5	67.0		97.0	95.7	1.300	1.341	6699.5
6	72.0		97.0	90.2	6.755	6.964	7165.7
7	74.0		81.0	87.1	−6.080	−7.506	7343.1
8	81.0		69.0	71.1	−2.101	−3.045	7901.1
9	91.0		42.0	39.7	2.332	5.552	8458.2
10	110.0		0.0	2.6	−2.556	0.000	8778.0
11	115.0		0.0	0.2	−0.200	0.000	8784.2
12	120.0		0.0	−0.8	0.791	0.000	8782.3
13	125.0		0.0	−1.1	1.146	0.000	8777.3
X@50Y	87.8						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	3.4						
F−stat	706.2						
Confidence	90.0						
A	−1.3	C		88.0			
A StdErr	2.0	C StdErr		1.0			
A t	−0.6	C t		90.8			
A ConfLimits	−5.0	C ConfLimits		86.2			
	2.5			89.7			
B	101.6	D		−12.4			
B StdErr	2.8	D StdErr		1.3			
B t	36.7	D t		−9.9			
B ConfLimits	96.6	D ConfLimits		−14.7			
	106.7			−10.1			

NEAR GUN 6, OUTDOOR–VEHICLE CONTROL–7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.225	−0.225	0.0
2	5.0	100.0	100.2	−0.224	−0.224	501.1
3	10.0	100.0	100.2	−0.222	−0.222	1002.2
4	15.0	100.0	100.2	−0.216	−0.216	1503.3
5	60.0	92.0	87.3	4.652	5.057	5902.4
6	67.0	75.0	76.8	−1.816	−2.422	6479.3
7	72.0	58.0	67.0	−9.013	−15.539	6839.6
8	74.0	67.0	62.7	4.329	6.461	6969.3
9	81.0	50.0	46.5	3.504	7.009	7351.9
10	110.0	0.0	2.4	−2.402	0.000	7918.8
11	115.0	0.0	0.4	−0.396	0.000	7925.4
12	120.0	0.0	−0.7	0.726	0.000	7924.2
13	125.0	0.0	−1.3	1.303	0.000	7919.0
X@50Y	79.5					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.0					
F−stat	452.4					
Confidence	90.0					
A	−1.8	C	79.8			
A StdErr	2.8	C StdErr	1.6			
A t	−0.6	C t	49.0			
A ConfLimits	−6.9	C ConfLimits	76.8			
	3.4		82.8			
B	102.0	D	−17.3			
B StdErr	3.6	D StdErr	2.6			
B t	28.2	D t	−6.7			
B ConfLimits	95.4	D ConfLimits	−22.1			
	108.6		−12.6			

NEAR GUN 6, OUTDOOR–VEHICLE CONTROL–8

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.190	−0.190	0.0
2	5.0	100.0	100.2	−0.190	−0.190	500.9
3	10.0	100.0	100.2	−0.190	−0.190	1001.9
4	15.0	100.0	100.2	−0.190	−0.190	1502.8
5	60.0	90.0	90.4	−0.419	−0.465	5953.0
6	67.0	80.0	76.5	3.539	4.423	6542.0
7	72.0	70.0	61.9	8.120	11.601	6889.1
8	74.0	40.0	55.5	−15.473	−38.683	7006.4
9	81.0	40.0	34.1	5.917	14.791	7317.8
10	110.0	0.0	1.4	−1.377	0.000	7657.6
11	115.0	0.0	0.4	−0.402	0.000	7661.9
12	120.0	0.0	−0.2	0.224	0.000	7662.2
13	125.0	0.0	−0.6	0.631	0.000	7660.0
X@50Y	75.7					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.3					
F−stat	188.6					
Confidence	90.0					
A	−1.5	C	75.9			
A StdErr	3.9	C StdErr	1.5			
A t	−0.4	C t	49.6			
A ConfLimits	−8.6	C ConfLimits	73.1			
	5.6		78.7			
B	101.7	D	9.5			
B StdErr	5.2	D StdErr	2.1			
B t	19.5	D t	4.6			
B ConfLimits	92.1	D ConfLimits	5.7			
	111.2		13.3			

NEAR GUN 6, OUTDOOR–VEHICLE CONTROL–9

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.0	0.969	0.969	0.0
2	5.0	100.0	99.0	0.969	0.969	495.2
3	10.0	100.0	99.0	0.969	0.969	990.3
4	15.0	100.0	99.0	0.970	0.970	1485.5
5	60.0	95.0	94.2	0.830	0.874	5917.2
6	67.0	68.0	81.6	−13.614	−20.020	6540.6
7	72.0	73.0	62.3	10.687	14.639	6904.2
8	74.0	55.0	52.5	2.476	4.503	7019.2
9	81.0	14.0	20.9	−6.940	−49.574	7269.4
10	110.0	0.0	−0.6	0.623	0.000	7369.1
11	115.0	0.0	−0.7	0.672	0.000	7365.8
12	120.0	0.0	−0.7	0.690	0.000	7362.4
13	125.0	0.0	−0.7	0.697	0.000	7358.9
X@50Y	74.5					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.3					
F−stat	196.7					
Confidence	90.0					
A	99.0	C	74.7			
A StdErr	3.0	C StdErr	0.9			
A t	32.9	C t	79.0			
A ConfLimits	93.5	C ConfLimits	72.9			
	104.5		76.4			
B	−99.7	D	4.9			
B StdErr	4.4	D StdErr	1.0			
B t	−22.5	D t	5.1			
B ConfLimits	−107.8	D ConfLimits	3.2			
	−91.6		6.7			

NEAR GUN 6, OUTDOOR–VEHICLE CONTROL–10

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.2	0.817	0.817	0.0
2	5.0	100.0	99.2	0.817	0.817	495.9
3	10.0	100.0	99.2	0.817	0.817	991.8
4	15.0	100.0	99.2	0.817	0.817	1487.7
5	60.0	94.0	94.7	−0.740	−0.787	5929.2
6	67.0	75.0	82.5	−7.537	−10.050	6557.8
7	72.0	68.0	63.1	4.922	7.238	6925.9
8	74.0	56.0	53.1	2.943	5.256	7042.2
9	81.0	16.0	20.7	−4.712	−29.450	7293.1
10	110.0	0.0	−0.4	0.425	0.000	7393.0
11	115.0	0.0	−0.5	0.466	0.000	7390.8
12	120.0	0.0	−0.5	0.481	0.000	7388.4
13	125.0	0.0	−0.5	0.486	0.000	7386.0
X@50Y	74.6					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.6					
F−stat	612.9					
Confidence	90.0					
A	−0.5	C	74.7			
A StdErr	1.8	C StdErr	0.5			
A t	−0.3	C t	141.9			
A ConfLimits	−3.8	C ConfLimits	73.8			
	2.8		75.7			
B	99.7	D	−4.8			
B StdErr	2.5	D StdErr	0.5			
B t	39.8	D t	−9.0			
B ConfLimits	95.1	D ConfLimits	−5.8			
	104.3		−3.8			

FAR GUN 60, OUTDOOR–VEHICLE CONTROL–7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.8	−0.774	−0.774	0.0
2	5.0	100.0	100.8	−0.774	−0.774	503.9
3	10.0	100.0	100.8	−0.774	−0.774	1007.7
4	15.0	100.0	100.8	−0.773	−0.773	1511.6
5	60.0	100.0	90.6	9.424	9.424	5974.8
6	67.0	75.0	79.5	−4.467	−5.956	6573.1
7	72.0	67.0	68.4	−1.358	−2.028	6943.7
8	74.0	58.0	63.3	−5.325	−9.181	7075.4
9	81.0	50.0	44.5	5.513	11.026	7453.2
10	110.0	0.0	1.3	−1.258	0.000	7927.2
11	115.0	0.0	0.2	−0.189	0.000	7930.5
12	120.0	0.0	−0.3	0.284	0.000	7930.1
13	125.0	0.0	−0.5	0.472	0.000	7928.1
X@50Y	79.0					
Equation	y=a+b0.5(1+erf((x−c)/(02d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.4					
F−stat	389.3					
Confidence	90.0					
A	−0.6	C	78.9			
A StdErr	2.5	C StdErr	1.4			
A t	−0.2	C t	57.3			
A ConfLimits	−5.1	C ConfLimits	76.4			
	4.0		81.5			
B	101.3	D	−14.8			
B StdErr	3.4	D StdErr	2.3			
B t	29.8	D t	−6.3			
B ConfLimits	95.1	D ConfLimits	−19.1			
	107.6		−10.5			

FAR GUN 60, OUTDOOR–VEHICLE CONTROL–8

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	101.0	−0.994	−0.994	0.0
2	5.0		100.0	101.0	−0.994	−0.994	505.0
3	10.0		100.0	101.0	−0.994	−0.994	1009.9
4	15.0		100.0	101.0	−0.994	−0.994	1514.9
5	60.0		100.0	98.1	1.858	1.858	6048.2
6	67.0		100.0	90.1	9.880	9.880	6711.9
7	72.0		70.0	78.5	−8.460	−12.085	7135.6
8	74.0		70.0	72.3	−2.303	−3.291	7286.5
9	81.0		50.0	46.6	3.421	6.841	7704.9
10	110.0		0.0	0.2	−0.249	0.000	8077.5
11	115.0		0.0	0.1	−0.082	0.000	8078.2
12	120.0		0.0	0.0	−0.047	0.000	8078.5
13	125.0		0.0	0.0	−0.041	0.000	8078.7
X@50Y	80.1						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	4.6						
F−stat	373.3						
Confidence	90.0						
A	0.0	C		80.0			
A StdErr	2.3	C StdErr		1.1			
A t	0.0	C t		72.6			
A ConfLimits	−4.2	C ConfLimits		78.0			
	4.3			82.0			
B	101.0	D		−10.5			
B StdErr	3.3	D StdErr		1.8			
B t	31.0	D t		−5.9			
B ConfLimits	95.0	D ConfLimits		−13.7			
	106.9			−7.2			

FAR GUN 60, OUTDOOR–VEHICLE CONTROL–9

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.9	0.137	0.137	0.0
2	5.0	100.0	99.9	0.137	0.137	499.3
3	10.0	100.0	99.9	0.137	0.137	998.6
4	15.0	100.0	99.9	0.137	0.137	1497.9
5	60.0	95.0	94.2	0.804	0.846	5970.4
6	67.0	75.0	78.4	−3.443	−4.591	6583.0
7	72.0	55.0	58.8	−3.821	−6.948	6928.5
8	74.0	59.0	49.9	9.129	15.473	7037.2
9	81.0	17.0	21.3	−4.261	−25.063	7281.1
10	110.0	0.0	−0.3	0.259	0.000	7382.0
11	115.0	0.0	−0.3	0.262	0.000	7380.7
12	120.0	0.0	−0.3	0.262	0.000	7379.4
13	125.0	0.0	−0.3	0.262	0.000	7378.1
X@50Y	74.0					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.8					
F−stat	547.1					
Confidence	90.0					
A	−0.3	C	74.0			
A StdErr	1.9	C StdErr	0.6			
A t	−0.1	C t	125.1			
A ConfLimits	−3.7	C ConfLimits	72.9			
	3.2		75.1			
B	100.1	D	−8.8			
B StdErr	2.7	D StdErr	1.0			
B t	37.7	D t	−9.2			
B ConfLimits	95.3	D ConfLimits	−10.6			
	105.0		−7.1			

FAR GUN 60, OUTDOOR–VEHICLE CONTROL–10

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.5	−0.504	−0.504	0.0
2	5.0	100.0	100.5	−0.504	−0.504	502.5
3	10.0	100.0	100.5	−0.504	−0.504	1005.0
4	15.0	100.0	100.5	−0.504	−0.504	1507.6
5	60.0	100.0	99.8	0.187	0.187	6028.8
6	67.0	97.0	92.1	4.912	5.064	6708.9
7	72.0	66.0	73.2	−7.157	−10.844	7127.9
8	74.0	66.0	62.0	4.013	6.080	7263.3
9	81.0	22.0	21.7	0.288	1.311	7550.2
10	110.0	0.0	0.1	−0.057	0.000	7631.7
11	115.0	0.0	0.1	−0.057	0.000	7631.9
12	120.0	0.0	0.1	−0.057	0.000	7632.2
13	125.0	0.0	0.1	−0.057	0.000	7632.5
X@50Y	76.0					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.2					
F−stat	814.0					
Confidence	90.0					
A	0.1	C	75.9			
A StdErr	1.6	C StdErr	0.4			
A t	0.0	C t	181.7			
A ConfLimits	−2.9	C ConfLimits	75.1			
	3.0		76.7			
B	100.4	D	−6.5			
B StdErr	2.2	D StdErr	0.6			
B t	46.2	D t	−10.8			
B ConfLimits	96.5	D ConfLimits	−7.6			
	104.4		−5.4			

LEOPARD II, OUTDOOR–VEHICLE CONTROL–7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	98.3	1.677	1.677	0.0
2	5.0	100.0	98.3	1.677	1.677	491.6
3	10.0	100.0	98.3	1.677	1.677	983.2
4	15.0	100.0	98.3	1.677	1.677	1474.9
5	67.0	92.0	97.2	−5.199	−5.652	6585.3
6	72.0	83.0	88.6	−5.647	−6.803	7056.5
7	74.0	83.0	78.2	4.758	5.733	7224.4
8	81.0	17.0	18.4	−1.378	−8.104	7557.4
9	91.0	0.0	0.3	−0.332	0.000	7608.4
10	110.0	0.0	−0.3	0.272	0.000	7603.5
11	115.0	0.0	−0.3	0.273	0.000	7606.1
12	120.0	0.0	−0.3	0.273	0.000	7598.2
13	125.0	0.0	−0.3	0.273	0	7606.4
X@50Y	77.2					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.3					
F−stat	863.9					
Confidence	90.0					
A	−0.3	C	77.3			
A StdErr	1.5	C StdErr	0.4			
A t	−0.2	C t	196.2			
A ConfLimits	−3.0	C ConfLimits	76.6			
	2.4		78.0			
B	98.6	D	31.2			
B StdErr	2.1	D StdErr	3.1			
B t	46.7	D t	10.2			
B ConfLimits	94.7	D ConfLimits	25.6			
	102.5		36.8			

LEOPARD II, OUTDOOR–VEHICLE CONTROL–8

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	0.1	99.930	99.930	0.0
2	5.0	100.0	101.1	−1.106	−1.106	505.5
3	10.0	100.0	101.1	−1.106	−1.106	1011.1
4	15.0	100.0	101.1	−1.106	−1.106	1516.6
5	67.0	100.0	99.1	0.874	0.874	6767.0
6	72.0	100.0	94.3	5.748	5.748	7252.7
7	74.0	90.0	90.4	−0.360	−0.400	7437.5
8	81.0	60.0	63.1	−3.094	−5.157	7987.2
9	91.0	20.0	17.3	2.739	13.694	8365.7
10	110.0	0.0	0.8	−0.753	0.000	8464.0
11	115.0	0.0	0.4	−0.378	0.000	8466.7
12	120.0	0.0	0.2	−0.214	0.000	8468.1
13	125.0	0.0	0.1	−0.139	0.000	8468.9
X@50Y	83.4					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.5					
F–stat	1399.4					
Confidence	90.0					
A	101.1	C	83.3			
A StdErr	1.1	C StdErr	0.5			
A t	88.9	C t	179.6			
A ConfLimits	99.0	C ConfLimits	82.5			
	103.2		84.2			
B	−101.0	D	−18.0			
B StdErr	1.8	D StdErr	1.4			
B t	−56.5	D t	−12.7			
B ConfLimits	−104.3	D ConfLimits	−20.6			
	−97.8		−15.4			

LEOPARD II, OUTDOOR–VEHICLE CONTROL–9

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.6	−0.625	−0.625	0.0
2	5.0	100.0	100.6	−0.625	−0.625	503.1
3	10.0	100.0	100.6	−0.625	−0.625	1006.2
4	15.0	100.0	100.6	−0.625	−0.625	1509.4
5	67.0	91.0	90.2	0.844	0.927	6679.8
6	72.0	92.0	80.2	11.817	12.845	7107.6
7	74.0	67.0	74.9	−7.863	−11.736	7262.8
8	81.0	46.0	52.1	−6.143	−13.354	7709.8
9	91.0	29.0	22.7	6.302	21.733	8073.4
10	110.0	0.0	2.3	−2.287	0.000	8255.8
11	115.0	0.0	0.8	−0.832	0.000	8263.3
12	120.0	0.0	−0.1	0.056	0.000	8265.1
13	125.0	0.0	−0.6	0.603	0.000	8263.3
X@50Y	81.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.7					
F–stat	244.9					
Confidence	90.0					
A	−1.6	C	81.8			
A StdErr	3.6	C StdErr	1.5			
A t	−0.4	C t	56.3			
A ConfLimits	−8.2	C ConfLimits	79.1			
	5.0		84.4			
B	102.2	D	10.9			
B StdErr	4.8	D StdErr	1.8			
B t	21.3	D t	6.1			
B ConfLimits	93.4	D ConfLimits	7.6			
	111.0		14.2			

LEOPARD II, OUTDOOR–VEHICLE CONTROL–10

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.2	0.767	0.767	0.0
2	5.0	100.0	99.2	0.767	0.767	496.2
3	10.0	100.0	99.2	0.767	0.767	992.3
4	15.0	100.0	99.2	0.767	0.767	1488.5
5	67.0	91.0	96.7	−5.669	−6.230	6641.5
6	72.0	90.0	85.3	4.746	5.273	7103.4
7	74.0	72.0	74.1	−2.104	−2.922	7263.6
8	81.0	19.0	19.5	−0.498	−2.621	7583.8
9	91.0	9.0	2.2	6.837	75.971	7652.5
10	110.0	0.0	1.6	−1.595	0.000	7683.6
11	115.0	0.0	1.6	−1.595	0.000	7693.4
12	120.0	0.0	1.6	−1.595	0.000	7698.1
13	125.0	0.0	1.6	−1.595	0.000	7711.4

X@50Y	77.0		
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	3.6		
F [illegible]	663.0		
Confidence	90.0		
A	99.2	C	76.9
A StdErr	1.7	C StdErr	0.4
A t	58.6	C t	171.5
A ConfLimits	96.1	C ConfLimits	76.1
	102.3		77.7
B	−97.6	D	2.7
B StdErr	2.4	D StdErr	0.3
B t	−40.9	D t	9.0
B ConfLimits	−102.0	D ConfLimits	2.2
	−93.3		3.3

MARDER, OUTDOOR−VEHICLE CONTROL−7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.376	−0.376	0.0
2	5.0	100.0	100.4	−0.376	−0.376	501.9
3	10.0	100.0	100.4	−0.376	−0.376	1003.8
4	15.0	100.0	100.4	−0.376	−0.376	1505.6
5	60.0	100.0	95.9	4.130	4.130	6010.5
6	67.0	67.0	73.6	−6.566	−9.800	6618.8
7	72.0	50.0	44.2	5.762	11.525	6915.5
8	74.0	33.0	32.4	0.577	1.747	6992.0
9	81.0	0.0	5.7	−5.723	0.000	7110.1
10	110.0	0.0	−0.8	0.831	0.000	7104.6
11	115.0	0.0	−0.8	0.831	0.000	7100.5
12	120.0	0.0	−0.8	0.831	0.000	7096.3
13	125.0	0.0	−0.8	0.831	0.000	7092.2
X@50Y	69.4					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.8					
F−stat	588.2					
Confidence	90.0					
A	−0.8	C	71.1			
A StdErr	1.8	C StdErr	0.5			
A t	−0.5	C t	155.1			
A ConfLimits	−4.2	C ConfLimits	70.3			
	2.5		71.9			
B	101.2	D	−6.5			
B StdErr	2.6	D StdErr	0.7			
B t	38.3	D t	−8.8			
B ConfLimits	96.4	D ConfLimits	−7.9			
	106.0		−5.2			

MARDER, OUTDOOR–VEHICLE CONTROL–8

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.090	−0.090	0.0
2	5.0	100.0	100.1	−0.090	−0.090	500.5
3	10.0	100.0	100.1	−0.090	−0.090	1000.9
4	15.0	100.0	100.1	−0.090	−0.090	1501.4
5	60.0	100.0	94.8	5.193	5.193	5984.5
6	67.0	70.0	80.9	−10.935	−15.621	6606.9
7	72.0	60.0	63.4	−3.359	−5.598	6970.0
8	74.0	70.0	55.1	14.917	21.310	7088.5
9	81.0	20.0	26.7	−6.725	−33.624	7371.9
10	110.0	0.0	−0.3	0.309	0.000	7517.9
11	115.0	0.0	−0.3	0.319	0.000	7516.3
12	120.0	0.0	−0.3	0.320	0.000	7514.7
13	125.0	0.0	−0.3	0.320	0.000	7513.1
X@50Y	75.2					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.9					
F−stat	165.5					
Confidence	90.0					
A	−0.3	C	75.2			
A StdErr	3.4	C StdErr	1.2			
A t	−0.1	C t	65.2			
A ConfLimits	−6.6	C ConfLimits	73.1			
	6.0		77.3			
B	100.4	D	−9.4			
B StdErr	4.8	D StdErr	1.9			
B t	20.9	D t	−4.9			
B ConfLimits	91.6	D ConfLimits	−12.9			
	109.2		−5.9			

MARDER, OUTDOOR–VEHICLE CONTROL–9

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.120	−0.120	0.0
2	5.0	100.0	100.1	−0.120	−0.120	500.6
3	10.0	100.0	100.1	−0.120	−0.120	1001.2
4	15.0	100.0	100.1	−0.120	−0.120	1501.8
5	60.0	100.0	97.0	3.017	3.017	5994.8
6	67.0	77.0	83.8	−6.808	−8.841	6638.6
7	72.0	72.0	58.8	13.150	18.264	7001.1
8	74.0	36.0	46.1	−10.121	−28.114	7106.1
9	81.0	14.0	12.5	1.516	10.831	7295.5
10	110.0	0.0	0.1	−0.074	0.000	7349.2
11	115.0	0.0	0.1	−0.068	0.000	7349.4
12	120.0	0.0	0.1	−0.066	0.000	7350.0
13	125.0	0.0	0.1	−0.066	0.000	7349.9
X@50Y	73.4					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.1					
F−stat	222.3					
Confidence	90.0					
A	0.1	C	73.4			
A StdErr	3.0	C StdErr	0.7			
A t	0.0	C t	100.3			
A ConfLimits	−5.4	C ConfLimits	72.0			
	5.6		74.7			
B	100.1	D	−3.9			
B StdErr	4.2	D StdErr	0.8			
B t	23.7	D t	−5.0			
B ConfLimits	92.3	D ConfLimits	−5.3			
	107.8		−2.5			

MARDER, OUTDOOR–VEHICLE CONTROL–10

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.432	−0.432	0.0
2	5.0	100.0	100.4	−0.432	−0.432	502.2
3	10.0	100.0	100.4	−0.432	−0.432	1004.3
4	15.0	100.0	100.4	−0.432	−0.432	1506.5
5	60.0	100.0	97.7	2.278	2.278	6020.0
6	67.0	75.0	75.9	−0.873	−1.163	6646.5
7	72.0	44.0	42.7	1.316	2.990	6945.8
8	74.0	28.0	29.6	−1.573	−5.617	7017.8
9	81.0	6.0	4.1	1.935	32.254	7115.8
10	110.0	0.0	0.3	−0.339	0.000	7134.0
11	115.0	0.0	0.3	−0.339	0.000	7135.7
12	120.0	0.0	0.3	−0.339	0.000	7137.4
13	125.0	0.0	0.3	−0.339	0.000	7139.1

X@50Y	71.0		
Equation	y=a+b0.5(1+erf((x−c)/(ū2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	1.3		
F−stat	5077.1		
Confidence	90.0		
A	0.3	C	70.9
A StdErr	0.6	C StdErr	0.1
A t	0.6	C t	499.5
A ConfLimits	−0.8	C ConfLimits	70.6
	1.5		71.2
B	100.1	D	−5.7
B StdErr	0.9	D StdErr	0.2
B t	113.1	D t	−24.7
B ConfLimits	98.5	D ConfLimits	−6.1
	101.7		−5.2

NEAR GUN 60, OUTDOOR–NOISE CONTROL–7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.9	0.112	0.112	0.0
2	5.0	100.0	99.9	0.112	0.112	499.4
3	10.0	100.0	99.9	0.112	0.112	998.9
4	15.0	100.0	99.9	0.112	0.112	1498.3
5	75.0	100.0	99.4	0.644	0.644	7490.2
6	80.0	92.0	96.8	−4.816	−5.234	7982.3
7	85.0	92.0	85.5	6.546	7.115	8444.1
8	90.0	50.0	55.0	−4.986	−9.973	8803.1
9	95.0	25.0	21.6	3.357	13.427	8988.7
10	110.0	0.0	0.6	−0.608	0.000	9075.4
11	115.0	0.0	0.3	−0.270	0.000	9077.6
12	120.0	0.0	0.2	−0.173	0.000	9078.5
13	125.0	0.0	0.1	−0.143	0.000	9079.4
X@50Y	90.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.4					
F–stat	745.8					
Confidence	90.0					
A	0.1	C	90.7			
A StdErr	1.7	C StdErr	0.4			
A t	0.1	C t	229.5			
A ConfLimits	−3.0	C ConfLimits	89.9			
	3.3		91.4			
B	99.8	D	27.6			
B StdErr	2.3	D StdErr	3.1			
B t	43.3	D t	8.9			
B ConfLimits	95.5	D ConfLimits	21.9			
	104.0		33.3			

NEAR GUN 60, OUTDOOR–NOISE CONTROL–8

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	−3.8	103.787	103.787	0.0
2	5.0	100.0	100.4	−0.449	−0.449	502.2
3	10.0	100.0	100.4	−0.449	−0.449	1004.5
4	15.0	100.0	100.4	−0.449	−0.449	1506.7
5	75.0	100.0	98.1	1.851	1.851	7523.4
6	80.0	90.0	94.2	−4.226	−4.696	8005.8
7	85.0	100.0	85.5	14.526	14.526	8457.7
8	90.0	50.0	69.7	−19.653	−39.306	8848.6
9	95.0	60.0	48.4	11.604	19.339	9144.8
10	110.0	0.0	5.3	−5.312	0.000	9481.3
11	115.0	0.0	0.9	−0.883	0.000	9495.6
12	120.0	0.0	−1.4	1.373	0.000	9493.7
13	125.0	0.0	−2.5	2.518	0.000	9483.7
X@50Y	94.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	9.4					
F−stat	91.7					
Confidence	90.0					
A	100.4	C	95.0			
A StdErr	4.3	C StdErr	2.3			
A t	23.4	C t	42.0			
A ConfLimits	92.6	C ConfLimits	90.9			
	108.3		99.2			
B	−104.2	D	−16.0			
B StdErr	9.5	D StdErr	5.5			
B t	−11.0	D t	−2.9			
B ConfLimits	−121.6	D ConfLimits	−26.2			
	−86.9		−5.9			

NEAR GUN 60, OUTDOOR−NOISE CONTROL−9

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	98.7	1.343	1.343	0.0
2	5.0	100.0	98.7	1.343	1.343	493.3
3	10.0	100.0	98.7	1.343	1.343	986.6
4	15.0	100.0	98.7	1.343	1.343	1479.9
5	75.0	90.0	98.7	−8.657	−9.619	7399.3
6	80.0	100.0	98.7	1.344	1.344	7892.6
7	85.0	100.0	97.9	2.127	2.127	8385.2
8	90.0	70.0	70.3	−0.272	−0.389	8831.2
9	95.0	10.0	9.7	0.268	2.684	9016.1
10	110.0	0.0	0.0	−0.045	0.000	9029.3
11	115.0	0.0	0.0	−0.045	0.000	9032.2
12	120.0	0.0	0.0	−0.045	0.000	9021.9
13	125.0	0.0	0.0	−0.045	0.000	9042.9
X@50Y	91.5					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.1					
F−stat	927.4					
Confidence	90.0					
A	98.7	C	91.5			
A StdErr	1.2	C StdErr	0.3			
A t	82.0	C t	359.2			
A ConfLimits	96.5	C ConfLimits	91.0			
	100.9		92.0			
B	−98.6	D	2.7			
B StdErr	2.0	D StdErr	0.3			
B t	−49.6	D t	8.6			
B ConfLimits	−102.3	D ConfLimits	2.1			
	−95.0		3.3			

NEAR GUN 60, OUTDOOR–NOISE CONTROL–10

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.053	−0.053	0.0
2	5.0	100.0	100.1	−0.053	−0.053	500.3
3	10.0	100.0	100.1	−0.053	−0.053	1000.5
4	15.0	100.0	100.1	−0.053	−0.053	1500.8
5	75.0	100.0	100.0	0.021	0.021	7503.9
6	80.0	100.0	99.1	0.922	0.922	8002.3
7	85.0	92.0	93.3	−1.270	−1.381	8486.8
8	90.0	75.0	74.2	0.786	1.048	8912.5
9	95.0	42.0	42.3	−0.280	−0.666	9206.2
10	110.0	0.0	0.2	−0.229	0.000	9387.9
11	115.0	0.0	−0.1	0.076	0.000	9388.0
12	120.0	0.0	−0.1	0.094	0.000	9387.6
13	125.0	0.0	−0.1	0.094	0.000	9387.1

X@50Y	93.8		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	0.6		
F−stat	23567.4		
Confidence	90.0		
A	−0.1	C	93.9
A StdErr	0.3	C StdErr	0.1
A t	−0.3	C t	1163.1
A ConfLimits	−0.7	C ConfLimits	93.7
	0.5		94.0
B	100.1	D	−5.9
B StdErr	0.4	D StdErr	0.1
B t	251.1	D t	−43.0
B ConfLimits	99.4	D ConfLimits	−6.2
	100.9		−5.7

LEOPARD II, OUTDOOR–NOISE CONTROLS–7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.7	−0.661	−0.661	0.0
2	5.0	100.0	100.7	−0.661	−0.661	503.3
3	10.0	100.0	100.7	−0.661	−0.661	1006.6
4	15.0	100.0	100.7	−0.661	−0.661	1509.9
5	75.0	100.0	98.4	1.571	1.571	7544.7
6	80.0	92.0	88.3	3.666	3.985	8017.0
7	85.0	58.0	62.8	−4.776	−8.234	8401.2
8	90.0	33.0	29.9	3.069	9.299	8631.8
9	95.0	8.0	8.5	−0.491	−6.141	8720.8
10	110.0	0.0	0.1	−0.101	0.000	8744.9
11	115.0	0.0	0.1	−0.097	0.000	8745.3
12	120.0	0.0	0.1	−0.097	0.000	8745.8
13	125.0	0.0	0.1	−0.097	0.000	8746.3

X@50Y	86.9		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	2.4		
F−stat	1566.9		
Confidence	90.0		
A	0.1	C	86.9
A StdErr	1.2	C StdErr	0.3
A t	0.1	C t	302.4
A ConfLimits	−2.0	C ConfLimits	86.3
	2.2		87.4
B	100.6	D	−5.9
B StdErr	1.6	D StdErr	0.4
B t	61.8	D t	−15.4
B ConfLimits	97.6	D ConfLimits	−6.6
	103.5		−5.2

LEOPARD II, OUTDOOR–NOISE CONTROLS–8

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	97.7	2.254	2.254	0.0
2	5.0	100.0	97.7	2.254	2.254	488.7
3	10.0	100.0	97.7	2.254	2.254	977.5
4	15.0	100.0	97.7	2.254	2.254	1466.2
5	75.0	90.0	97.7	−7.712	−8.568	7330.9
6	80.0	100.0	97.4	2.559	2.559	7819.0
7	85.0	90.0	95.1	−5.102	−5.669	8302.3
8	90.0	80.0	78.4	1.609	2.011	8747.8
9	95.0	30.0	30.6	−0.588	−1.959	9026.0
10	110.0	0.0	−0.0	0.009	0.000	9109.4
11	115.0	0.0	−0.1	0.065	0.000	9107.8
12	120.0	0.0	−0.1	0.072	0.000	9108.8
13	125.0	0.0	−0.1	0.072	0.000	9109.0
X@50Y	93.1					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.6					
F−stat	660.2					
Confidence	90.0					
A	−0.1	C	93.2			
A StdErr	1.8	C StdErr	0.3			
A t	−0.0	C t	270.8			
A ConfLimits	−3.4	C ConfLimits	92.6			
	3.2		93.8			
B	97.8	D	−2.3			
B StdErr	2.3	D StdErr	0.3			
B t	42.6	D t	−7.6			
B ConfLimits	93.6	D ConfLimits	−2.8			
	102.0		−1.7			

LEOPARD II, OUTDOOR–NOISE CONTROLS–9

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.6	−0.609	−0.609	0.0
2	5.0		100.0	100.6	−0.609	−0.609	503.0
3	10.0		100.0	100.6	−0.609	−0.609	1006.1
4	15.0		100.0	100.6	−0.609	−0.609	1509.1
5	75.0		100.0	92.2	7.818	7.818	7516.3
6	80.0		70.0	77.0	−7.047	−10.066	7943.6
7	85.0		50.0	53.0	−3.050	−6.100	8271.4
8	90.0		40.0	27.9	12.144	30.360	8472.0
9	95.0		0.0	10.3	−10.339	0.000	8563.3
10	110.0		0.0	−0.7	0.675	0.000	8592.8
11	115.0		0.0	−0.7	0.741	0.000	8589.2
12	120.0		0.0	−0.7	0.747	0.000	8585.5
13	125.0		0.0	−0.7	0.747	0.000	8581.8
X@50Y	85.6						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	6.5						
F−stat	199.3						
Confidence	90.0						
A	−0.7	C		85.6			
A StdErr	3.2	C StdErr		0.9			
A t	−0.2	C t		92.0			
A ConfLimits	−6.6	C ConfLimits		83.9			
	5.1			87.3			
B	101.4	D		−7.7			
B StdErr	4.6	D StdErr		1.2			
B t	22.2	D t		−6.1			
B ConfLimits	93.0	D ConfLimits		−9.9			
	109.7			−5.4			

LEOPARD II, OUTDOOR–NOISE CONTROLS–10

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	−1.4	101.449	101.449	0.0
2	5.0	100.0	100.3	−0.315	−0.315	501.6
3	10.0	100.0	100.3	−0.315	−0.315	1003.1
4	15.0	100.0	100.3	−0.315	−0.315	1504.7
5	75.0	100.0	97.7	2.303	2.303	7515.3
6	80.0	92.0	89.7	2.292	2.491	7987.9
7	85.0	58.0	67.8	−9.845	−16.975	8388.7
8	90.0	50.0	35.7	14.343	28.685	8647.6
9	95.0	0.0	13.0	−13.015	0.000	8762.8
10	110.0	0.0	−0.9	0.871	0.000	8805.7
11	115.0	0.0	−1.2	1.240	0.000	8800.2
12	120.0	0.0	−1.4	1.370	0.000	8793.7
13	125.0	0.0	−1.4	1.418	0.000	8786.6

X@50Y	87.8		
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	7.4		
F–stat	160.3		
Confidence	90.0		
A	100.3	C	87.9
A StdErr	3.5	C StdErr	0.0
A t	28.6	C t	
A ConfLimits	93.9	C ConfLimits	87.9
	106.8		87.9
B	−101.8	D	−23.0
B StdErr	5.5	D StdErr	5.0
B t	−18.4	D t	−4.6
B ConfLimits	−111.9	D ConfLimits	−32.2
	−91.6		−13.7

VEHICLE 2, OUTDOOR–NOISE CONTROLS–7

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.043	0.043	0.0
2	5.0	100.0	100.0	0.043	0.043	499.8
3	10.0	100.0	100.0	0.043	0.043	999.6
4	15.0	100.0	100.0	0.043	0.043	1499.4
5	75.0	92.0	90.6	1.417	1.541	7452.5
6	80.0	75.0	79.4	−4.427	−5.903	7880.0
7	85.0	67.0	62.8	4.220	6.298	8237.5
8	90.0	42.0	43.2	−1.228	−2.924	8502.9
9	95.0	25.0	25.2	−0.155	−0.620	8672.3
10	110.0	0.0	1.1	−1.087	0.000	8814.5
11	115.0	0.0	−0.1	0.115	0.000	8816.3
12	120.0	0.0	−0.5	0.451	0.000	8814.7
13	125.0	0.0	−0.5	0.524	0.000	8812.2

X@50Y	88.3		
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	2.2		
F−stat	1627.3		
Confidence	90.0		
A	−0.5	C	88.4
A StdErr	1.2	C StdErr	0.4
A t	−0.5	C t	223.5
A ConfLimits	−2.7	C ConfLimits	87.6
	1.6		89.1
B	100.5	D	−10.1
B StdErr	1.6	D StdErr	0.6
B t	62.1	D t	−17.0
B ConfLimits	97.5	D ConfLimits	−11.2
	103.5		−9.0

VEHICLE 2, OUTDOOR–NOISE CONTROLS–8

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	101.0	−0.977	−0.977	0.0
2	5.0	100.0	101.0	−0.977	−0.977	504.9
3	10.0	100.0	101.0	−0.977	−0.977	1009.8
4	15.0	100.0	101.0	−0.977	−0.977	1514.7
5	75.0	100.0	97.9	2.072	2.072	7562.5
6	80.0	100.0	91.7	8.339	8.339	8038.8
7	85.0	70.0	78.9	−8.866	−12.666	8468.1
8	90.0	60.0	59.4	0.578	0.963	8816.1
9	95.0	40.0	37.4	2.574	6.435	9058.0
10	110.0	0.0	1.9	−1.874	0.000	9279.6
11	115.0	0.0	−0.0	0.007	0.000	9283.4
12	120.0	0.0	−0.5	0.493	0.000	9281.8
13	125.0	0.0	−0.6	0.586	0.000	9279.1
X@50Y	92.1					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.3					
F−stat	436.1					
Confidence	90.0					
A	−0.6	C	92.1			
A StdErr	2.4	C StdErr	0.8			
A t	−0.3	C t	118.4			
A ConfLimits	−4.9	C ConfLimits	90.7			
	3.7		93.5			
B	101.6	D	−9.1			
B StdErr	3.3	D StdErr	1.2			
B t	31.2	D t	−7.4			
B ConfLimits	95.6	D ConfLimits	−11.3			
	107.5		−6.8			

VEHICLE 2, OUTDOOR–NOISE CONTROLS–9

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	97.5	2.488	2.488	0.0
2	5.0	100.0	97.5	2.488	2.488	487.6
3	10.0	100.0	97.5	2.488	2.488	975.1
4	15.0	100.0	97.5	2.488	2.488	1462.7
5	75.0	70.0	90.8	−20.819	−29.742	7279.2
6	80.0	90.0	81.0	8.963	9.959	7712.1
7	85.0	70.0	62.4	7.557	10.796	8074.6
8	90.0	30.0	38.1	−8.131	−27.102	8326.4
9	95.0	20.0	18.2	1.822	9.111	8463.6
10	110.0	0.0	0.5	−0.507	0.000	8552.0
11	115.0	0.0	−0.2	0.188	0.000	8552.6
12	120.0	0.0	−0.4	0.442	0.000	8550.9
13	125.0	0.0	−0.5	0.535	0.000	8548.4
X@50Y	87.6					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	8.6					
F−stat	103.5					
Confidence	90.0					
A	−0.6	C	87.9			
A StdErr	4.5	C StdErr	1.4			
A t	−0.1	C t	65.0			
A ConfLimits	−8.8	C ConfLimits	85.4			
	7.6		90.4			
B	98.1	D	−4.9			
B StdErr	6.3	D StdErr	1.2			
B t	15.6	D t	−4.0			
B ConfLimits	86.6	D ConfLimits	−7.2			
	109.6		−2.7			

VEHICLE 2, OUTDOOR–NOISE CONTROLS–10

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	−0.022	−0.022	0.0
2	5.0	100.0	100.0	−0.022	−0.022	500.1
3	10.0	100.0	100.0	−0.022	−0.022	1000.2
4	15.0	100.0	100.0	−0.022	−0.022	1500.3
5	75.0	100.0	97.4	2.631	2.631	7493.2
6	80.0	83.0	88.3	−5.350	−6.445	7962.5
7	85.0	67.0	61.1	5.936	8.860	8345.2
8	90.0	17.0	24.9	−7.879	−46.344	8556.1
9	95.0	16.0	7.1	8.902	55.637	8627.8
10	110.0	0.0	1.1	−1.077	0.000	8662.8
11	115.0	0.0	1.0	−1.032	0.000	8668.0
12	120.0	0.0	1.0	−1.023	0.000	8673.1
13	125.0	0.0	1.0	−1.021	0.000	8678.2
X@50Y	86.4					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.9					
F−stat	358.0					
Confidence	90.0					
A	100.0	C	86.4			
A StdErr	2.3	C StdErr	0.6			
A t	44.0	C t	152.5			
A ConfLimits	95.9	C ConfLimits	85.3			
	104.2		87.4			
B	−99.0	D	3.2			
B StdErr	3.4	D StdErr	0.5			
B t	−29.4	D t	6.6			
B ConfLimits	−105.2	D ConfLimits	2.3			
	−92.8		4.0			

Appendix E: Subject Response Data and Transition Analysis Curves, Grouped by Measurement Sets, for Blast Sounds

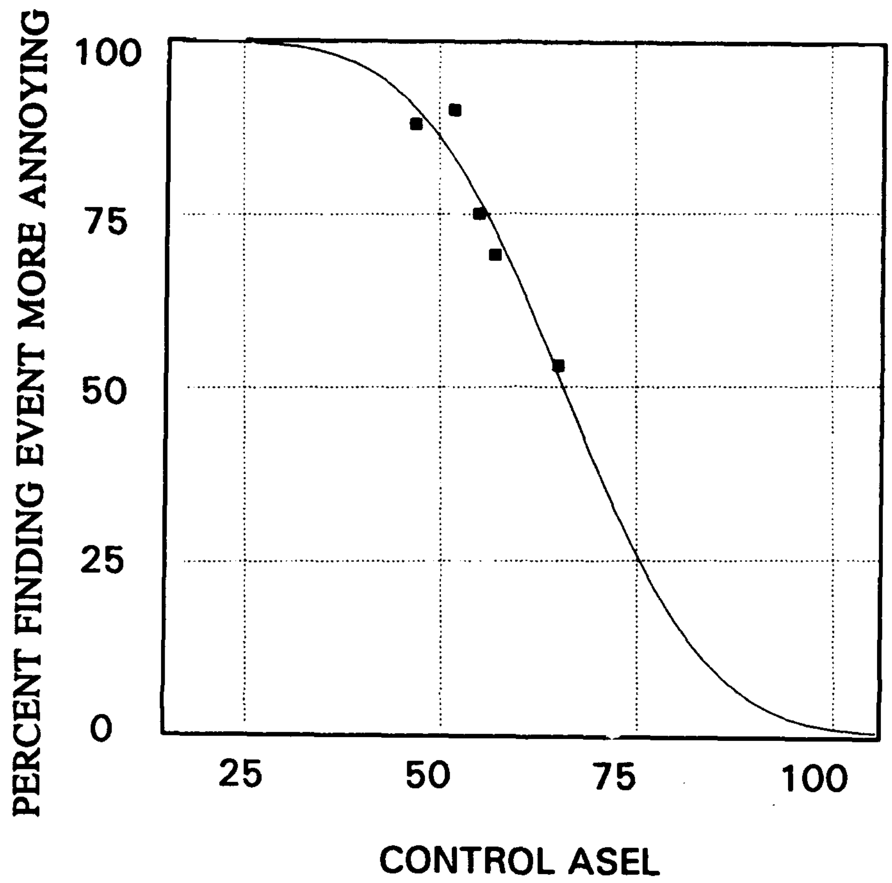


Figure E1

Test Source: Large Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 1

Table E1 LARGE BLAST, SET 1 – VEHICLE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	99.9	0.085	0.085	0.0
2	5.0		100.0	99.9	0.117	0.117	499.5
3	10.0		100.0	99.8	0.174	0.174	998.8
4	15.0		100.0	99.7	0.276	0.276	1497.7
5	47.0		88.0	90.9	−2.893	−3.288	4617.4
6	52.0		90.0	84.7	5.260	5.844	5057.7
7	55.0		75.0	79.6	−4.609	−6.146	5304.5
8	61.0		69.0	65.8	3.154	4.571	5743.1
9	65.0		53.0	54.6	−1.620	−3.057	5984.4
10	110.0		0.0	0.3	−0.284	0.000	6641.5
11	115.0		0.0	0.0	−0.015	0.000	6642.2
12	120.0		0.0	−0.1	0.135	0.000	6641.9
13	125.0		0.0	−0.2	0.219	0.000	6641.0
X@50Y	65.6						
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	2.8						
F−stat	974.0						
Confidence	90.0						
A	−0.3	C		66.6			
A StdErr	1.4	C StdErr		1.0			
A t	−0.2	C t		66.5			
A ConfLimits	−3.0	C ConfLimits		64.8			
	2.3			68.5			
B	100.3	D		−8.5			
B StdErr	2.1	D StdErr		1.1			
B t	48.0	D t		−8.1			
B ConfLimits	96.4	D ConfLimits		−10.4			
	104.1			−6.6			

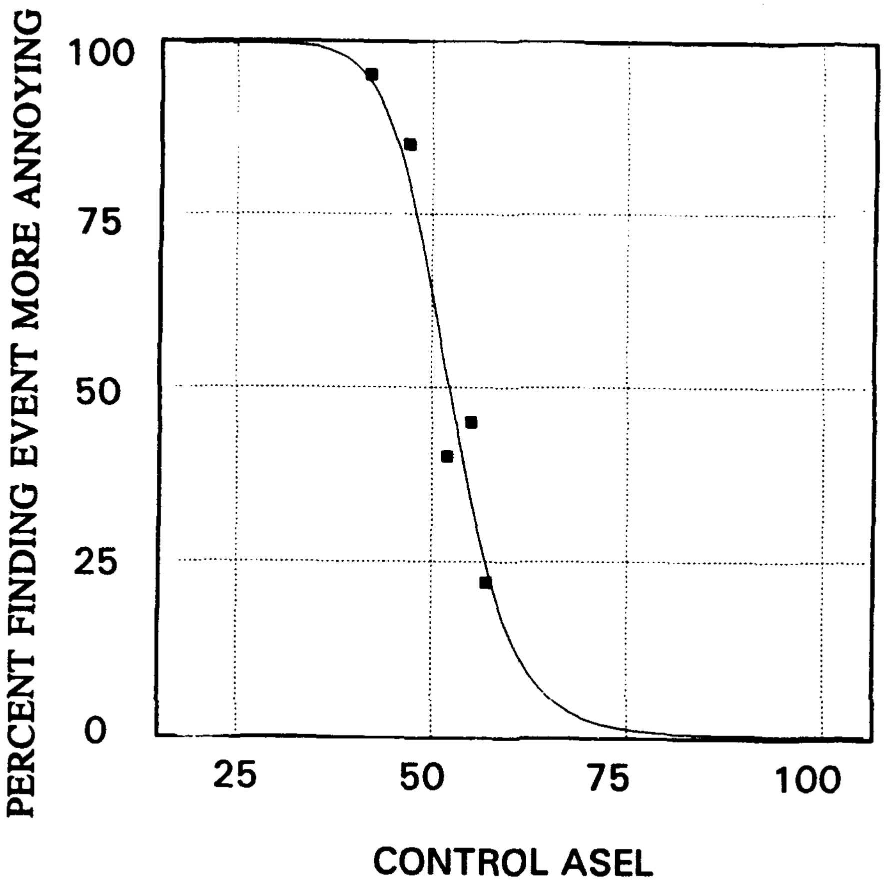


Figure E2

Test Source: Small Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 1

Table E2 SMALL BLAST, SET 1 – VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	99.0	99.5	−0.550	−0.555	0.0
2	5.0	99.0	99.5	−0.550	−0.555	497.7
3	10.0	99.0	99.5	−0.550	−0.555	995.5
4	15.0	99.0	99.5	−0.550	−0.555	1493.2
5	42.0	95.0	94.1	0.871	0.917	4164.4
6	47.0	85.0	79.7	5.315	6.253	4604.9
7	52.0	40.0	51.6	−11.596	−28.989	4937.0
8	55.0	45.0	34.0	10.981	24.401	5064.8
9	57.0	22.0	24.5	−2.516	−11.437	5122.9
10	110.0	0.0	0.2	−0.217	0.000	5266.8
11	115.0	0.0	0.2	−0.214	0.000	5267.9
12	120.0	0.0	0.2	−0.213	0.000	5269.2
13	125.0	0.0	0.2	−0.212	0.000	5270.2
X@50Y	52.2					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.7					
F−stat	240.5					
Confidence	90.0					
A	0.2	C	52.3			
A StdErr	2.8	C StdErr	0.7			
A t	0.1	C t	76.0			
A ConfLimits	−5.0	C ConfLimits	51.0			
	5.4		53.5			
B	99.3	D	13.0			
B StdErr	4.0	D StdErr	2.2			
B t	25.0	D t	5.9			
B ConfLimits	92.0	D ConfLimits	9.0			
	106.6		17.1			

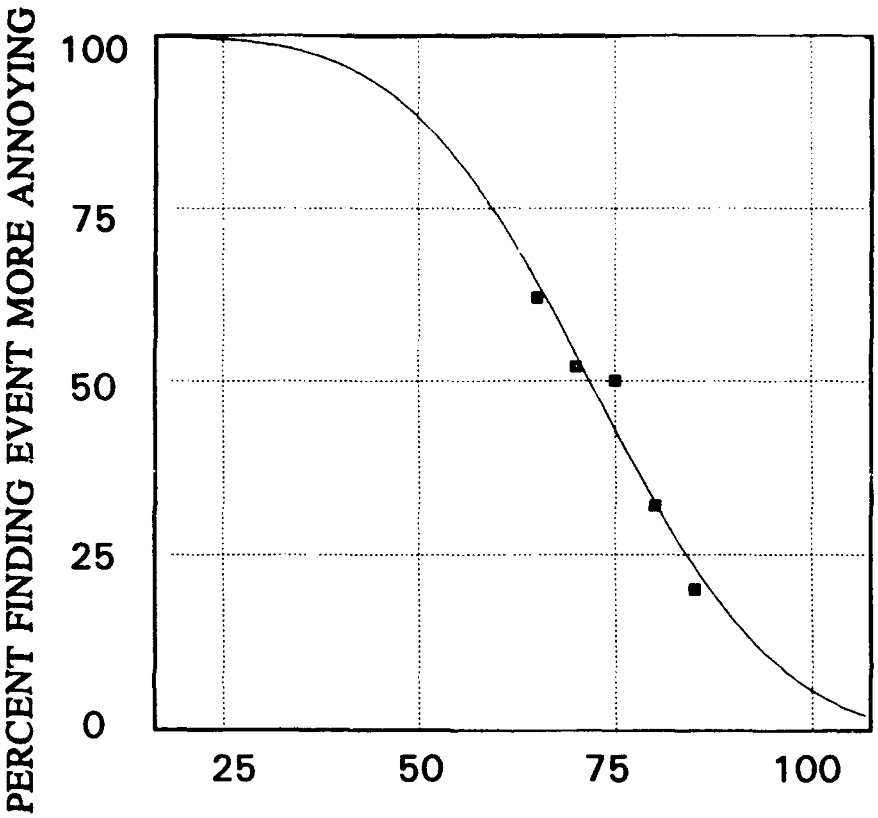


Figure E3

Test Source: Large Blast
Condition: Windows Closed
Control Source: White Noise
Data Included: Set 1

Table E3

LARGE BLAST, SET 1—NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.049	0.049	0.0
2	5.0	100.0	99.9	0.059	0.059	499.7
3	10.0	100.0	99.9	0.084	0.084	999.4
4	15.0	100.0	99.9	0.147	0.147	1498.8
5	65.0	62.0	64.3	−2.320	−3.742	6052.5
6	70.0	52.0	53.8	−1.765	−3.395	6348.0
7	75.0	50.0	42.9	7.097	14.194	6589.6
8	80.0	32.0	32.5	−0.508	−1.588	6777.8
9	85.0	20.0	23.3	−3.259	−16.295	6916.6
10	110.0	0.0	1.0	−0.975	0.000	7141.9
11	115.0	0.0	−0.0	0.021	0.000	7144.1
12	120.0	0.0	−0.6	0.553	0.000	7142.5
13	125.0	0.0	−0.8	0.818	0.000	7139.0
X@50Y	71.7					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.8					
F−stat	887.4					
Confidence	90.0					
A	−1.0	C	72.0			
A StdErr	1.7	C StdErr	0.8			
A t	−0.6	C t	86.7			
A ConfLimits	−4.1	C ConfLimits	70.5			
	2.0		73.5			
B	101.0	D	−18.5			
B StdErr	2.2	D StdErr	1.9			
B t	45.3	D t	−9.8			
B ConfLimits	96.9	D ConfLimits	−21.9			
	105.1		−15.0			

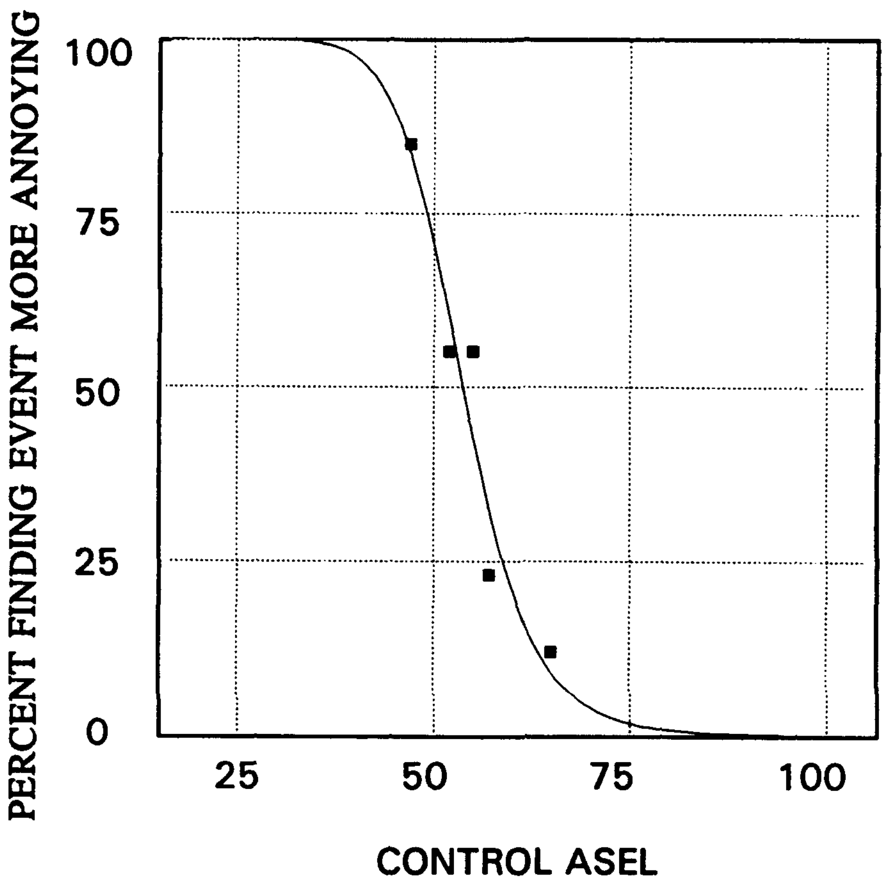


Figure E4

Test Source: Large Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 2

Table E4 LARGE BLAST, SET 2–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.1	−0.080	−0.080	0.0
2	5.0		100.0	100.1	−0.080	−0.080	500.4
3	10.0		100.0	100.1	−0.080	−0.080	1000.8
4	15.0		100.0	100.1	−0.080	−0.080	1501.2
5	47.0		85.0	83.7	1.287	1.514	4640.3
6	52.0		55.0	59.9	−4.913	−8.933	5003.9
7	55.0		55.0	43.0	11.989	21.799	5158.1
8	57.0		23.0	32.8	−9.837	−42.771	5233.7
9	65.0		12.0	9.1	2.866	23.887	5384.2
10	110.0		0.0	0.3	−0.276	0.000	5449.8
11	115.0		0.0	0.3	−0.269	0.000	5451.1
12	120.0		0.0	0.3	−0.265	0.000	5452.5
13	125.0		0.0	0.3	−0.263	0.000	5453.9
X@50Y	53.7						
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	5.5						
F–stat	252.6						
Confidence	90.0						
A	0.3	C		53.7			
A StdErr	2.7	C StdErr		0.7			
A t	0.1	C t		78.1			
A ConfLimits	−4.7	C ConfLimits		52.5			
	5.2			55.0			
B	99.8	D		12.2			
B StdErr	3.9	D StdErr		2.1			
B t	25.7	D t		5.9			
B ConfLimits	92.7	D ConfLimits		8.4			
	107.0			16.0			

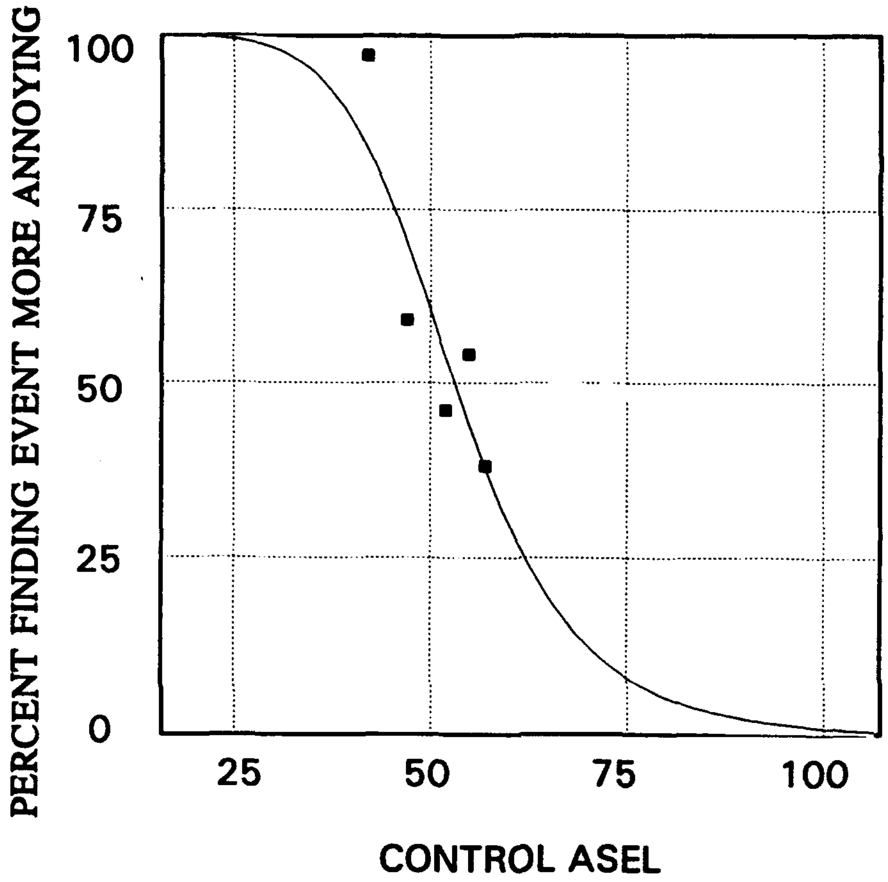


Figure E5

Test Source: Small Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 2

Table E5 SMALL BLAST, SET 2–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	99.0	−0.2	99.172	100.174	0.0
2	5.0	99.0	99.9	−0.853	−0.862	499.3
3	10.0	99.0	99.9	−0.852	−0.861	998.5
4	15.0	99.0	99.8	−0.840	−0.848	1497.8
5	42.0	97.0	83.9	13.135	13.541	4103.3
6	47.0	59.0	70.3	−11.282	−19.122	4490.5
7	52.0	46.0	53.8	−7.758	−16.865	4801.1
8	55.0	54.0	43.9	10.073	18.654	4947.5
9	57.0	38.0	37.9	0.146	0.385	5029.2
10	110.0	0.0	0.4	−0.426	0.000	5469.8
11	115.0	0.0	0.3	−0.266	0.000	5471.5
12	120.0	0.0	0.2	−0.153	0.000	5472.5
13	125.0	0.0	0.1	−0.072	0.000	5473.1
X@50Y	53.1					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.2					
F–stat	138.7					
Confidence	90.0					
A	99.9	C	53.2			
A StdErr	3.6	C StdErr	1.4			
A t	27.9	C t	37.2			
A ConfLimits	93.3	C ConfLimits	50.5			
	106.4		55.8			
B	−100.0	D	−7.0			
B StdErr	5.3	D StdErr	1.7			
B t	−19.0	D t	−4.0			
B ConfLimits	−109.7	D ConfLimits	−10.2			
	−90.4		−3.8			

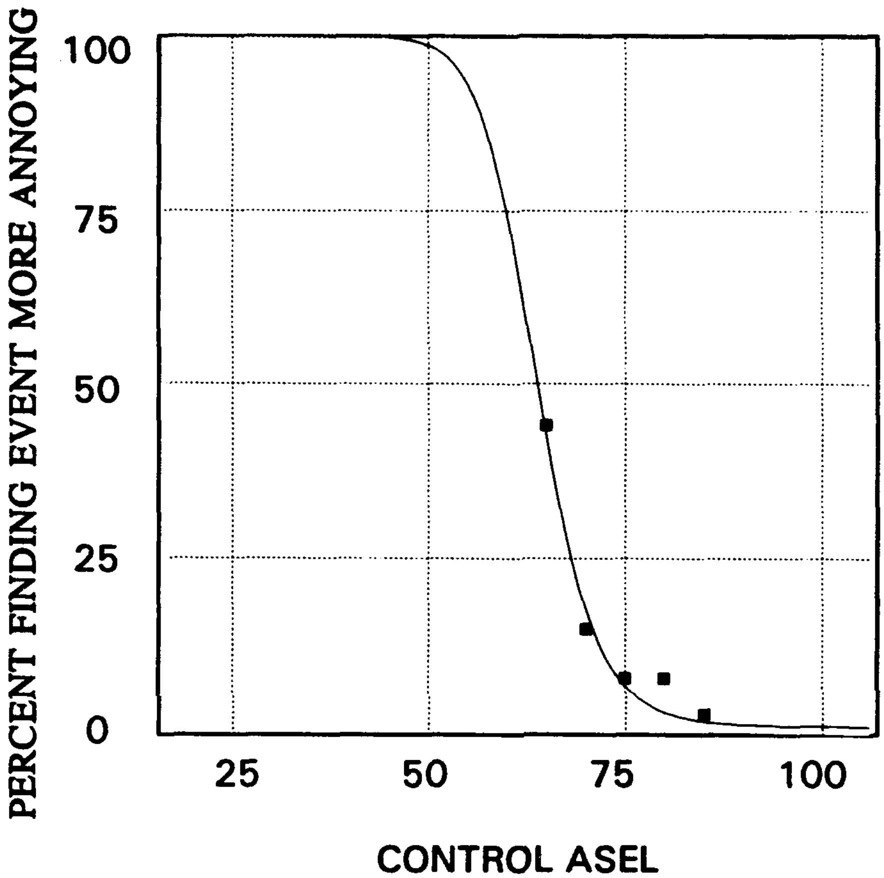


Figure E6

Test Source: Large Blast
Condition: Windows Closed
Control Source: White Noise
Data Included: Set 2

Table E6

LARGE BLAST, SET 2–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	−0.025	−0.025	0.0
2	5.0	100.0	100.0	−0.025	−0.025	500.1
3	10.0	100.0	100.0	−0.025	−0.025	1000.3
4	15.0	100.0	100.0	−0.025	−0.025	1500.4
5	65.0	44.0	43.0	0.975	2.217	6205.4
6	70.0	15.0	17.8	−2.834	−18.891	6351.0
7	75.0	8.0	6.9	1.093	13.662	6408.3
8	80.0	8.0	3.2	4.833	60.410	6431.8
9	85.0	3.0	1.9	1.070	35.676	6444.0
10	110.0	0.0	1.3	−1.264	0.000	6478.7
11	115.0	0.0	1.3	−1.260	0.000	6485.4
12	120.0	0.0	1.3	−1.258	0.000	6491.1
13	125.0	0.0	1.3	−1.257	0.000	6497.5
X@50Y	63.9					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.1					
F−stat	1804.9					
Confidence	90.0					
A	1.3	C	63.8			
A StdErr	0.9	C StdErr	0.4			
A t	1.3	C t	160.0			
A ConfLimits	−0.5	C ConfLimits	63.1			
	3.0		64.6			
B	98.8	D	17.4			
B StdErr	1.4	D StdErr	2.1			
B t	69.3	D t	8.5			
B ConfLimits	96.2	D ConfLimits	13.6			
	101.4		21.2			

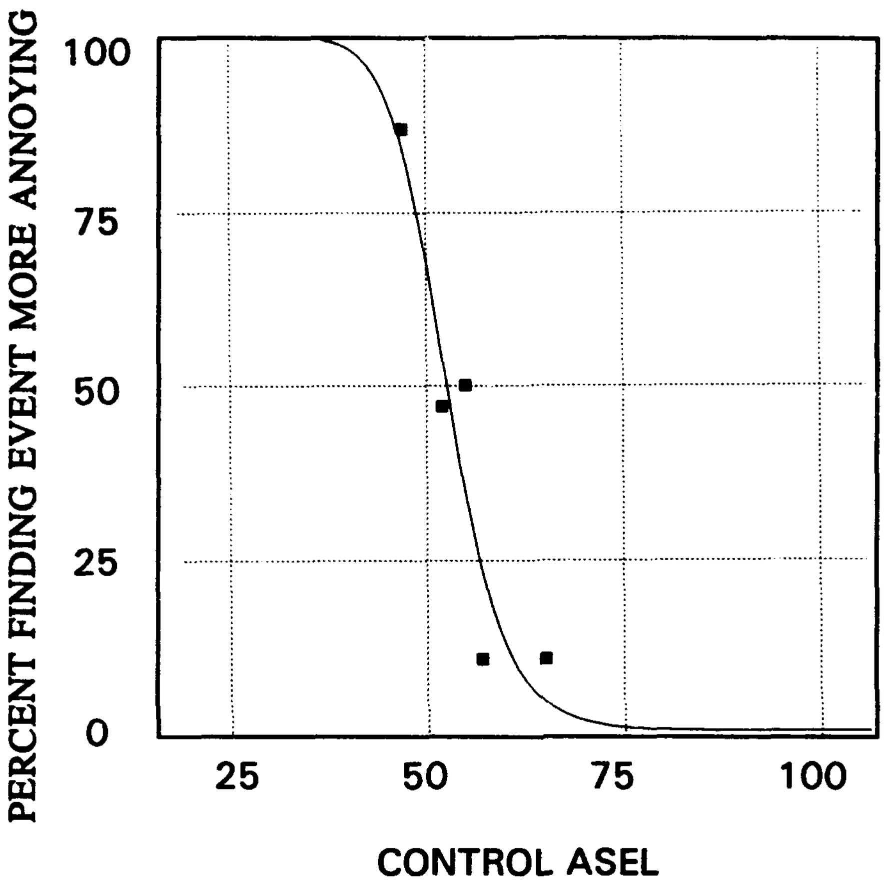


Figure E7

Test Source: Large Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 3

Table E7

LARGE BLAST, SET 3–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	0.8	99.179	99.179	0.0
2	5.0	100.0	100.2	−0.244	−0.244	501.2
3	10.0	100.0	100.2	−0.244	−0.244	1002.4
4	15.0	100.0	100.2	−0.244	−0.244	1503.7
5	47.0	87.0	84.1	2.859	3.287	4659.2
6	52.0	47.0	54.4	−7.352	−15.642	5011.5
7	55.0	50.0	34.4	15.581	31.163	5143.8
8	57.0	11.0	23.9	−12.855	−116.863	5201.6
9	65.0	11.0	5.0	6.031	54.827	5297.4
10	110.0	0.0	0.8	−0.823	0.000	5354.4
11	115.0	0.0	0.8	−0.822	0.000	5358.2
12	120.0	0.0	0.8	−0.822	0.000	5362.8
13	125.0	0.0	0.8	−0.821	0.000	5367.3
X@50Y	52.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.5					
F–stat	139.9					
Confidence	90.0					
A	100.2	C	52.5			
A StdErr	3.7	C StdErr	0.8			
A t	26.9	C t	63.7			
A ConfLimits	93.4	C ConfLimits	51.0			
	107.1		54.1			
B	−99.4	D	−14.7			
B StdErr	5.2	D StdErr	3.4			
B t	−19.0	D t	−4.4			
B ConfLimits	−109.0	D ConfLimits	−20.9			
	−89.8		−8.5			

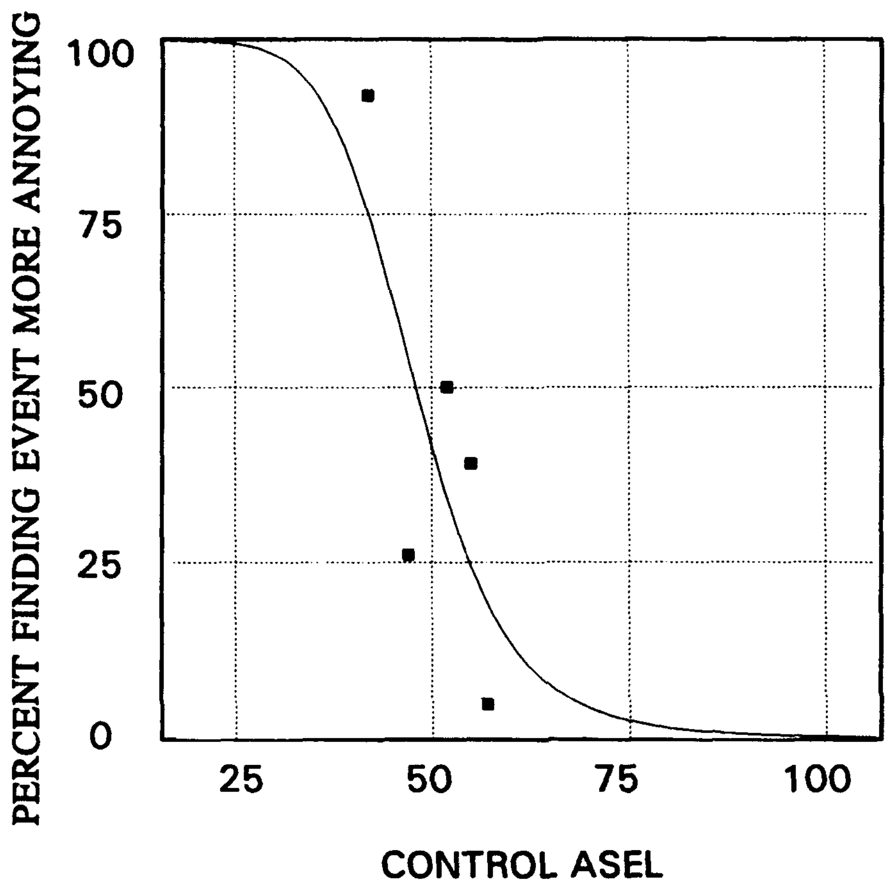


Figure E8

Test Source: Small Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 3

Table E8

SMALL BLAST, SET 3–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	99.0	0.2	98.833	99.831	0.0
2	5.0	99.0	99.8	−0.788	−0.796	498.9
3	10.0	99.0	99.8	−0.788	−0.796	997.9
4	15.0	99.0	99.8	−0.782	−0.790	1496.8
5	42.0	92.0	75.4	16.649	18.097	4066.3
6	47.0	26.0	54.5	−28.548	−109.799	4392.5
7	52.0	50.0	34.1	15.903	31.806	4612.4
8	55.0	39.0	24.5	14.497	37.171	4699.7
9	57.0	5.0	19.4	−14.439	−288.774	4743.5
10	110.0	0.0	0.3	−0.266	0.000	4918.0
11	115.0	0.0	0.2	−0.235	0.000	4919.3
12	120.0	0.0	0.2	−0.215	0.000	4920.4
13	125.0	0.0	0.2	−0.201	0.000	4921.5
X@50Y	48.0					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	0.9					
r2	0.9					
Fit StdErr	14.0					
F–stat	37.7					
Confidence	90.0					
A	99.8	C	48.0			
A StdErr	7.0	C StdErr	2.3			
A t	14.3	C t	20.7			
A ConfLimits	87.0	C ConfLimits	43.8			
	112.6		52.3			
B	−99.6	D	−8.4			
B StdErr	10.0	D StdErr	3.3			
B t	−10.0	D t	−2.5			
B ConfLimits	−117.9	D ConfLimits	−14.4			
	−81.3		−2.3			

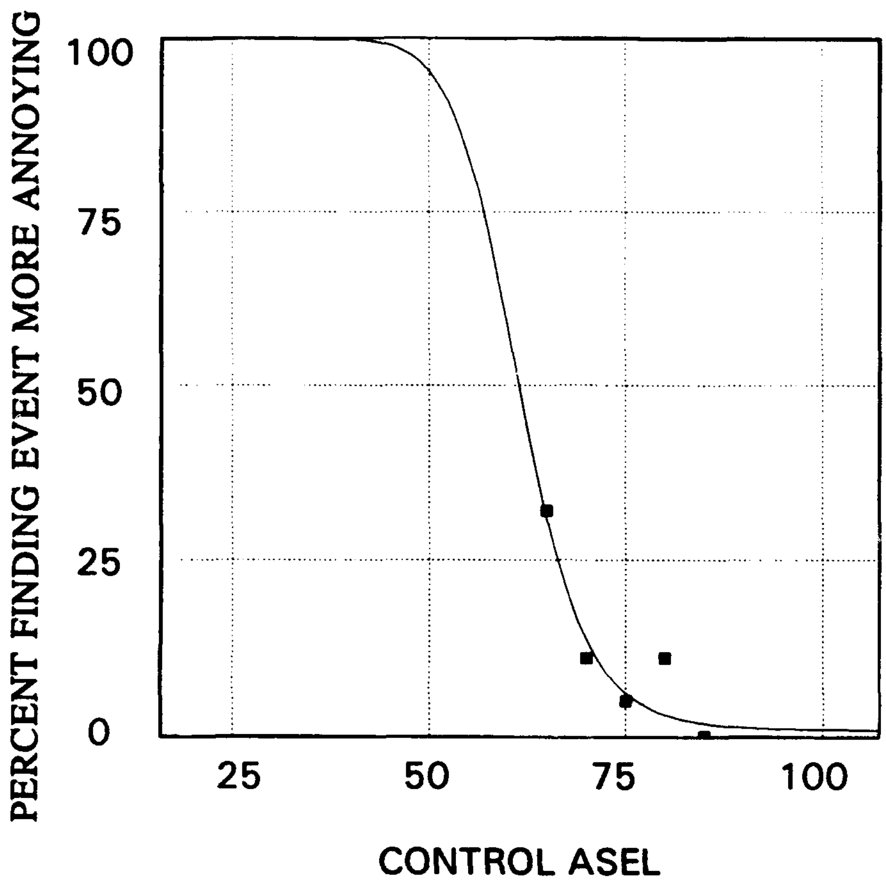


Figure E9

Test Source: Large Blast
Condition: Windows Closed
Control Source: White Noise
Data Included: Set 3

Table E9 LARGE BLAST, SET 3–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	−0.012	−0.012	0.0
2	5.0	100.0	100.0	−0.012	−0.012	500.1
3	10.0	100.0	100.0	−0.012	−0.012	1000.1
4	15.0	100.0	100.0	−0.012	−0.012	1500.2
5	65.0	32.0	31.0	0.993	3.103	6016.2
6	70.0	11.0	13.7	−2.743	−24.937	6123.1
7	75.0	5.0	6.0	−1.027	−20.530	6169.7
8	80.0	11.0	3.0	8.045	73.138	6191.0
9	65.0	0.0	1.7	−1.741	0.000	6202.2
10	110.0	0.0	0.9	−0.881	0.000	6229.2
11	115.0	0.0	0.9	−0.871	0.000	6233.5
12	120.0	0.0	0.9	−0.866	0.000	6237.8
13	125.0	0.0	0.9	−0.863	0.000	6242.4
X@50Y	61.5					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.0					
F−stat	933.6					
Confidence	90.0					
A	0.9	C	61.4			
A StdErr	1.4	C StdErr	1.1			
A t	0.6	C t	54.1			
A ConfLimits	−1.6	C ConfLimits	59.3			
	3.4		63.5			
B	99.2	D	14.5			
B StdErr	2.0	D StdErr	3.3			
B t	48.9	D t	4.4			
B ConfLimits	95.4	D ConfLimits	8.4			
	102.9		20.5			

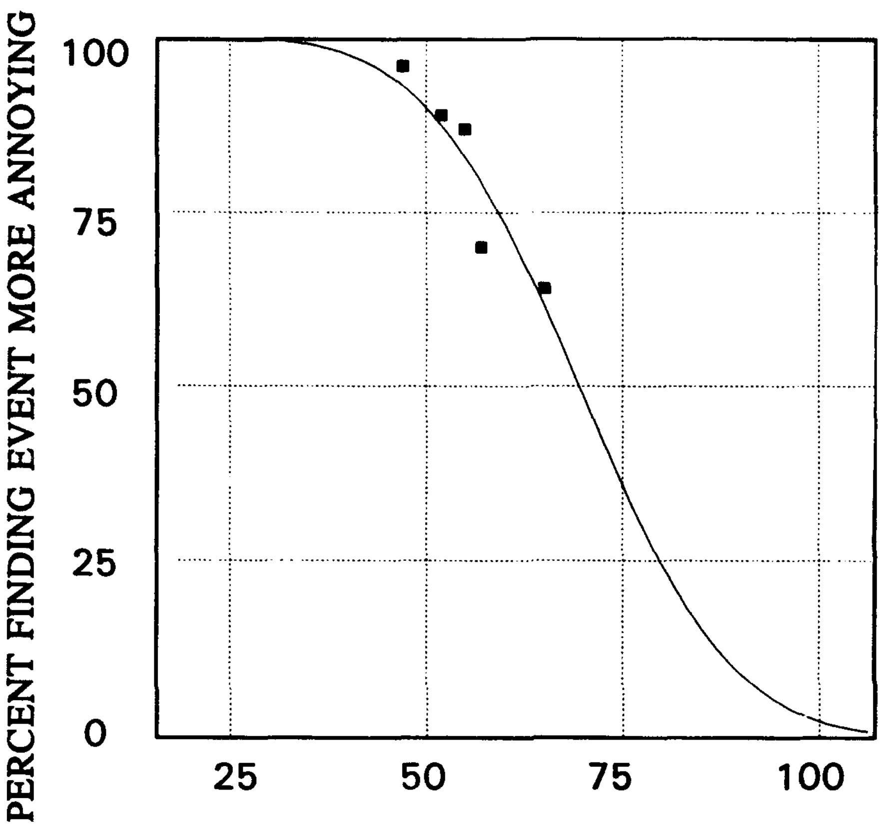


Figure E10

Test Source: Large Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 4

Table E10 LARGE BLAST, SET 4–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.357	−0.357	0.0
2	5.0	100.0	100.4	−0.356	−0.356	501.8
3	10.0	100.0	100.4	−0.352	−0.352	1003.6
4	15.0	100.0	100.3	−0.338	−0.338	1505.3
5	47.0	96.0	93.2	2.841	2.960	4667.9
6	52.0	89.0	87.5	1.480	1.663	5120.5
7	55.0	87.0	82.9	4.060	4.666	5376.5
8	57.0	70.0	79.4	−9.372	−13.388	5538.8
9	65.0	64.0	61.5	2.503	3.910	6105.7
10	110.0	0.0	0.3	−0.277	0.000	6958.5
11	115.0	0.0	0.0	−0.020	0.000	6959.1
12	120.0	0.0	−0.1	0.078	0.000	6958.9
13	125.0	0.0	−0.1	0.111	0.000	6958.4
X@50Y	69.4					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.7					
F−stat	583.3					
Confidence	90.0					
A	−0.1	C	69.4			
A StdErr	1.9	C StdErr	2.0			
A t	−0.1	C t	33.9			
A ConfLimits	−3.6	C ConfLimits	65.7			
	3.3		73.2			
B	100.5	D	−15.3			
B StdErr	2.7	D StdErr	2.7			
B t	37.5	D t	−5.7			
B ConfLimits	95.6	D ConfLimits	−20.3			
	105.4		−10.4			

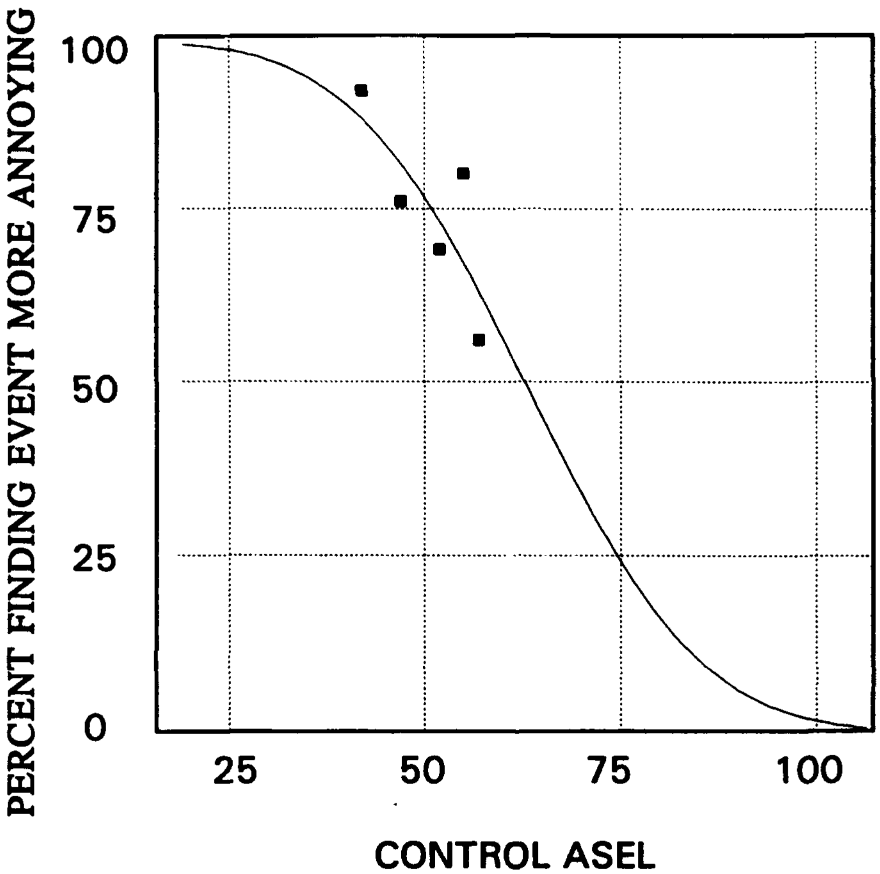


Figure E11

Test Source: Small Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 4

Table E11

SMALL BLAST, SET 4–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		99.0	99.2	−0.186	−0.188	0.0
2	5.0		99.0	99.2	−0.159	−0.160	495.9
3	10.0		99.0	99.1	−0.088	−0.088	991.5
4	15.0		99.0	98.9	0.083	0.084	1486.6
5	42.0		92.0	88.0	4.045	4.396	4071.6
6	47.0		76.0	81.5	−5.485	−7.217	4496.0
7	52.0		69.0	73.1	−4.063	−5.889	4883.2
8	55.0		80.0	67.2	12.826	16.032	5093.7
9	57.0		56.0	63.0	−6.968	−12.443	5223.9
10	110.0		0.0	0.2	−0.203	0.000	6242.0
11	115.0		0.0	0.0	−0.002	0.000	6242.4
12	120.0		0.0	−0.1	0.083	0.000	6242.2
13	125.0		0.0	−0.1	0.117	0.000	6241.7
X@50Y	62.8						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	5.5						
F−stat	238.7						
Confidence	90.0						
A	−0.1	C		63.0			
A StdErr	2.8	C StdErr		3.5			
A t	−0.0	C t		17.8			
A ConfLimits	−5.3	C ConfLimits		56.5			
	5.1			69.5			
B	99.3	D		−17.4			
B StdErr	4.2	D StdErr		5.7			
B t	23.9	D t		−3.0			
B ConfLimits	91.7	D ConfLimits		−27.8			
	106.9			−6.9			

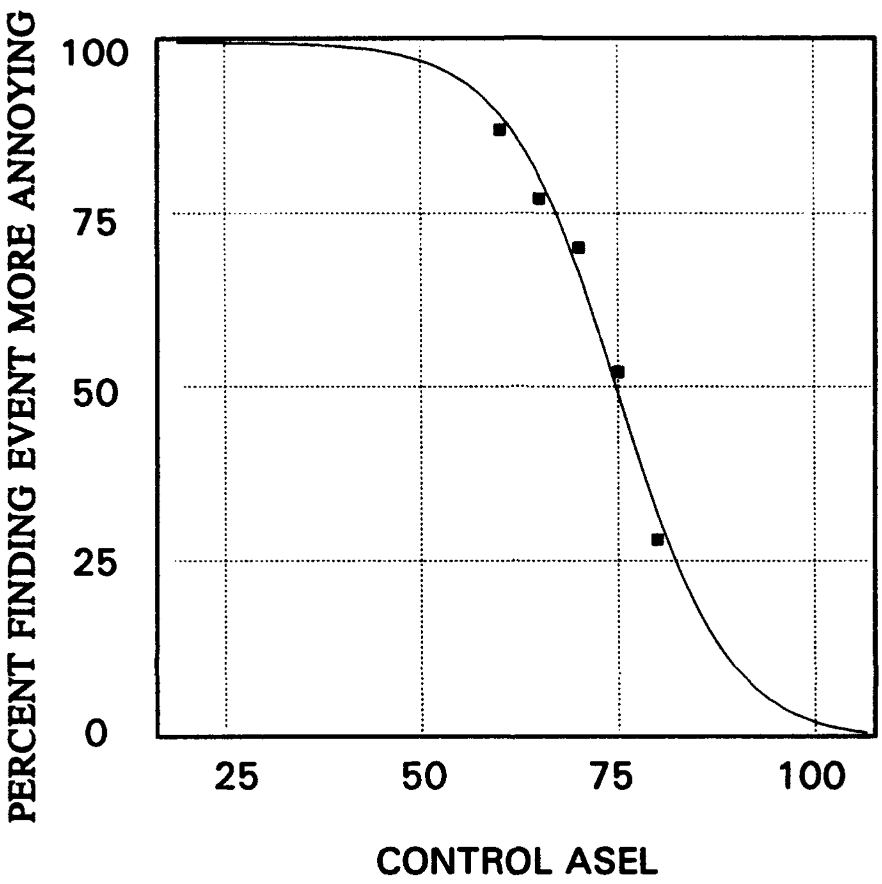


Figure E12

Test Source: Large Blast
Condition: Windows Closed
Control Source: White Noise
Data Included: Set 4

Table E12

LARGE BLAST, SET 4–NOISE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	99.5	0.467	0.467	0.0
2	5.0		100.0	99.5	0.469	0.469	497.7
3	10.0		100.0	99.5	0.473	0.473	995.3
4	15.0		100.0	99.5	0.482	0.482	1492.9
5	60.0		87.0	89.1	−2.137	−2.456	5896.3
6	65.0		77.0	80.2	−3.216	−4.176	6321.6
7	70.0		70.0	66.5	3.535	5.050	6690.3
8	75.0		52.0	49.1	2.949	5.671	6980.0
9	80.0		28.0	31.8	−3.754	−13.408	7181.0
10	110.0		0.0	0.1	−0.148	0.000	7431.3
11	115.0		0.0	−0.2	0.166	0.000	7431.1
12	120.0		0.0	−0.3	0.319	0.000	7429.9
13	125.0		0.0	−0.4	0.394	0.000	7428.1
X@50Y	74.7						
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	2.4						
F−stat	1320.3						
Confidence	90.0						
A	−0.5	C		74.9			
A StdErr	1.2	C StdErr		0.5			
A t	−0.4	C t		155.8			
A ConfLimits	−2.7	C ConfLimits		74.0			
	1.8			75.7			
B	100.0	D		−6.9			
B StdErr	1.7	D StdErr		0.5			
B t	57.8	D t		−13.7			
B ConfLimits	96.8	D ConfLimits		−7.8			
	103.2			−6.0			

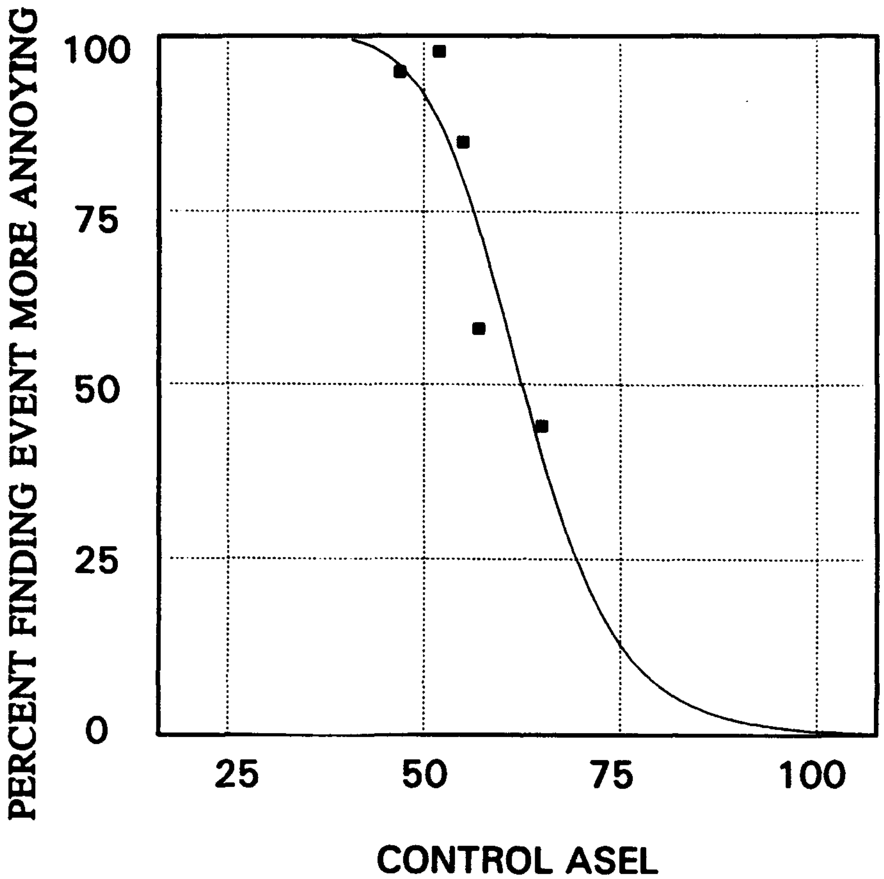


Figure E13

Test Source: Large Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 5

Table E13

LARGE BLAST, SET 5–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.8	−0.801	−0.801	0.0
2	5.0	100.0	100.8	−0.801	−0.801	504.0
3	10.0	100.0	100.8	−0.801	−0.801	1008.0
4	15.0	100.0	100.8	−0.800	−0.800	1512.0
5	47.0	95.0	95.9	−0.897	−0.945	4717.1
6	52.0	98.0	87.8	10.153	10.360	5179.0
7	55.0	85.0	79.7	5.339	6.281	5431.0
8	57.0	58.0	72.7	−14.738	−25.411	5583.5
9	65.0	44.0	39.9	4.107	9.334	6034.9
10	110.0	0.0	0.3	−0.304	0.000	6386.1
11	115.0	0.0	0.2	−0.205	0.000	6387.3
12	120.0	0.0	0.1	−0.145	0.000	6388.2
13	125.0	0.0	0.1	−0.108	0.000	6388.8
X@50Y	62.5					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	6.4					
F−stat	194.9					
Confidence	90.0					

A	0.0	C	62.4
A StdErr	3.2	C StdErr	1.3
A t	0.0	C t	46.3
A ConfLimits	−5.9	C ConfLimits	60.0
	6.0		64.9
B	100.8	D	10.5
B StdErr	4.5	D StdErr	2.2
B t	22.2	D t	4.8
B ConfLimits	92.4	D ConfLimits	6.5
	109.1		14.5

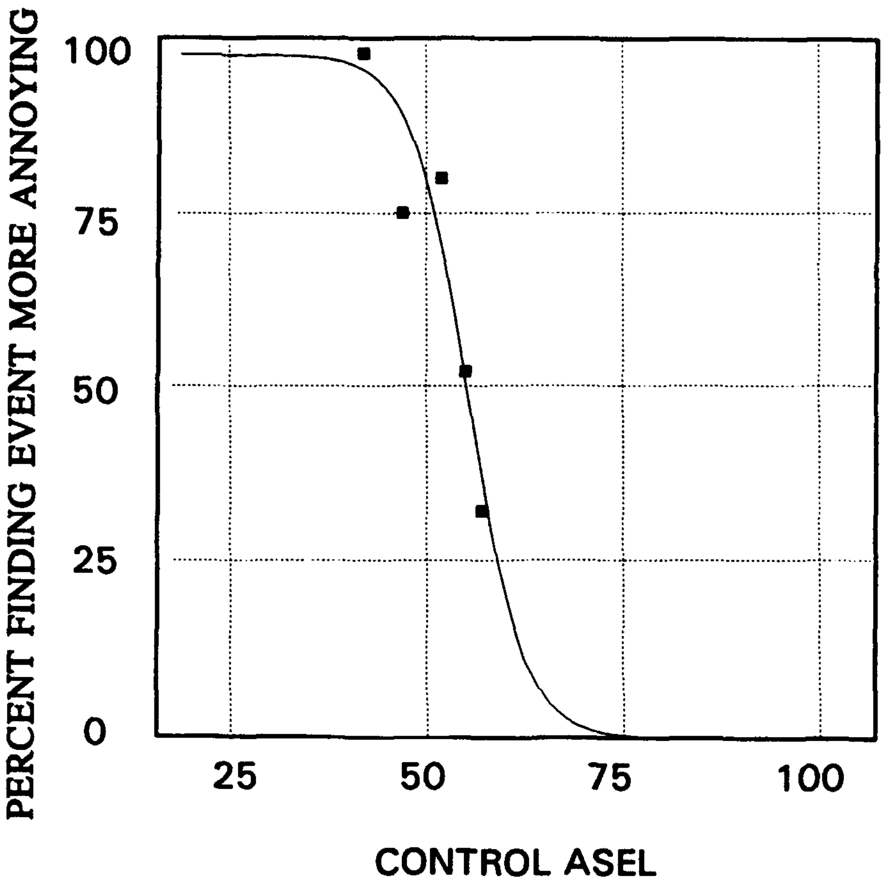


Figure E14

Test Source: Small Blast
Condition: Windows Closed
Control Source: Vehicles
Data Included: Set 5

Table E14

SMALL BLAST, SET 5–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	99.0	97.7	1.256	1.268	0.0
2	5.0	99.0	97.7	1.256	1.268	488.7
3	10.0	99.0	97.7	1.256	1.269	977.4
4	15.0	99.0	97.7	1.257	1.269	1466.2
5	42.0	98.0	95.6	2.418	2.467	4097.6
6	47.0	75.0	89.3	−14.334	−19.112	4563.1
7	52.0	80.0	70.2	9.781	12.227	4969.4
8	55.0	52.0	50.8	1.181	2.270	5152.0
9	57.0	32.0	37.1	−5.078	−15.869	5239.7
10	110.0	0.0	−0.3	0.252	0.000	5391.1
11	115.0	0.0	−0.3	0.252	0.000	5390.3
12	120.0	0.0	−0.3	0.252	0.000	5388.3
13	125.0	0.0	−0.3	0.252	0.000	5386.9

X@50Y	55.1		
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	6.2		
F−stat	201.5		
Confidence	90.0		
A	−0.3	C	55.3
A StdErr	3.1	C StdErr	0.6
A t	−0.1	C t	85.5
A ConfLimits	−5.9	C ConfLimits	54.1
	5.4		56.5
B	98.0	D	−3.5
B StdErr	4.2	D StdErr	0.8
B t	23.2	D t	−4.2
B ConfLimits	90.3	D ConfLimits	−5.0
	105.7		−2.0

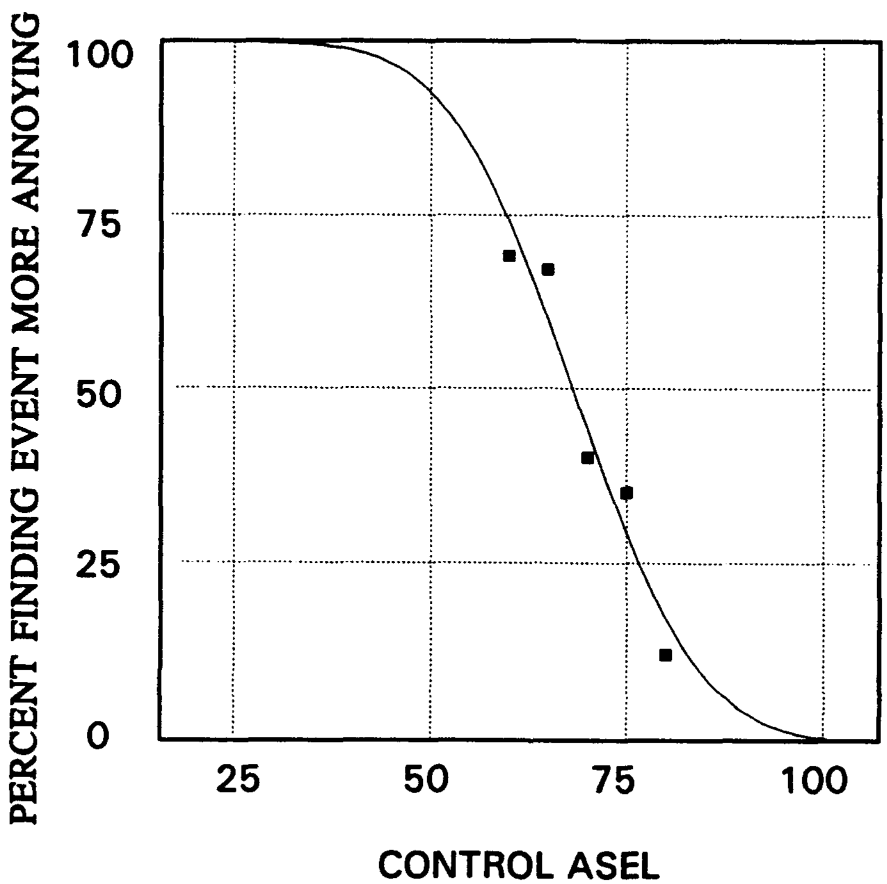


Figure E15

Test Source: Large Blast
Condition: Windows Closed
Control Source: White Noise
Data Included: Set 5

Table E15

LARGE BLAST, SET 5–NOISE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	99.8	0.194	0.194	0.0
2	5.0		100.0	99.8	0.194	0.194	499.0
3	10.0		100.0	99.8	0.194	0.194	998.1
4	15.0		100.0	99.8	0.195	0.195	1497.1
5	60.0		69.0	74.3	−5.255	−7.616	5795.9
6	65.0		67.0	60.0	7.002	10.451	6132.6
7	70.0		40.0	44.2	−4.210	−10.525	6393.3
8	75.0		35.0	29.3	5.736	16.388	6576.2
9	80.0		12.0	17.2	−5.169	−43.078	6690.8
10	110.0		0.0	−0.3	0.250	0.000	6799.6
11	115.0		0.0	−0.3	0.284	0.000	6798.3
12	120.0		0.0	−0.3	0.292	0.000	6796.8
13	125.0		0.0	−0.3	0.294	0.000	6795.4
X@50Y	68.2						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	4.1						
F−stat	431.4						
Confidence	90.0						
A	−0.3	C		68.3			
A StdErr	2.1	C StdErr		0.9			
A t	−0.1	C t		79.7			
A ConfLimits	−4.1	C ConfLimits		66.7			
	3.5			69.8			
B	100.1	D		−12.5			
B StdErr	2.9	D StdErr		1.4			
B t	34.1	D t		−8.8			
B ConfLimits	94.7	D ConfLimits		−15.2			
	105.5			−9.9			

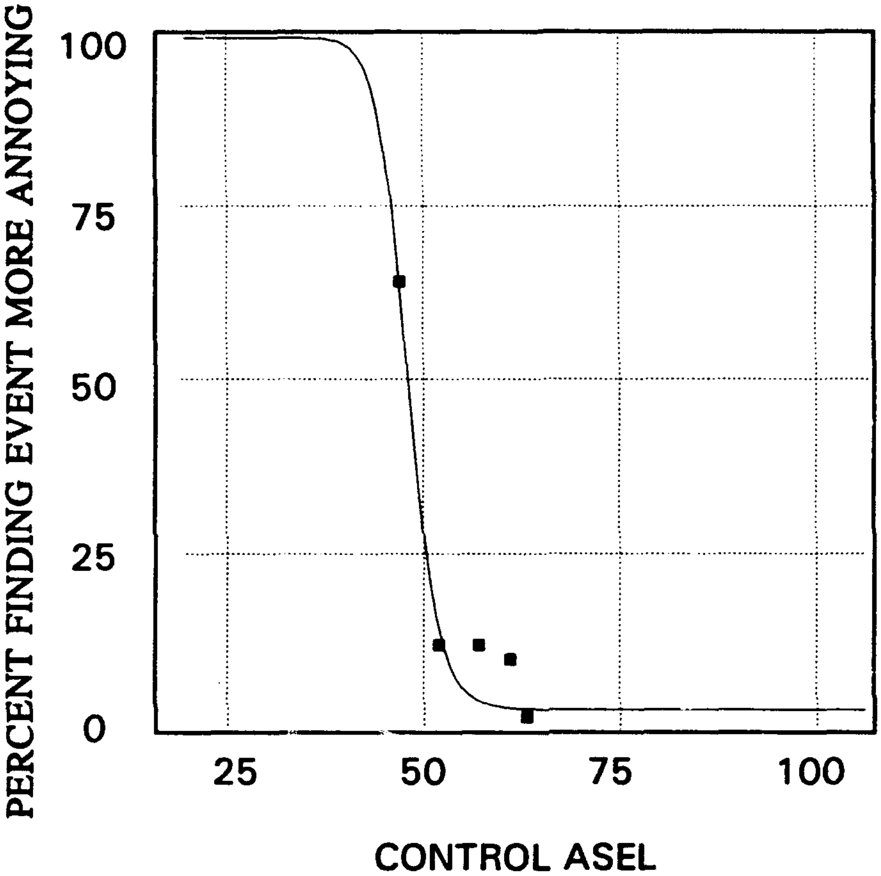


Figure E16

Test Source: Small Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 6

Table E16 SMALL BLAST, SET 6–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	99.0	99.0	−0.041	−0.042	0.0
2	5.0	99.0	99.0	−0.041	−0.042	495.2
3	10.0	99.0	99.0	−0.041	−0.042	990.4
4	15.0	99.0	99.0	−0.041	−0.042	1485.6
5	47.0	64.0	63.5	0.489	0.765	4575.9
6	52.0	12.0	14.2	−2.211	−18.421	4752.3
7	57.0	12.0	4.2	7.822	65.187	4789.8
8	61.0	10.0	3.2	6.838	68.384	4803.9
9	63.0	2.0	3.0	−1.035	−51.768	4810.0
10	110.0	0.0	2.9	−2.935	0.000	4949.7
11	115.0	0.0	2.9	−2.935	0.000	4975.2
12	120.0	0.0	2.9	−2.935	0.000	4968.8
13	125.0	0.0	2.9	−2.935	0.000	4976.8
X@50Y	48.1					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.1					
F−stat	497.0					
Confidence	90.0					
A	2.9	C	48.0			
A StdErr	1.6	C StdErr	0.3			
A t	1.8	C t	138.2			
A ConfLimits	−0.0	C ConfLimits	47.4			
	5.9		48.6			
B	96.1	D	25.2			
B StdErr	2.6	D StdErr	4.6			
B t	37.1	D t	5.5			
B ConfLimits	91.4	D ConfLimits	16.8			
	100.9		33.7			

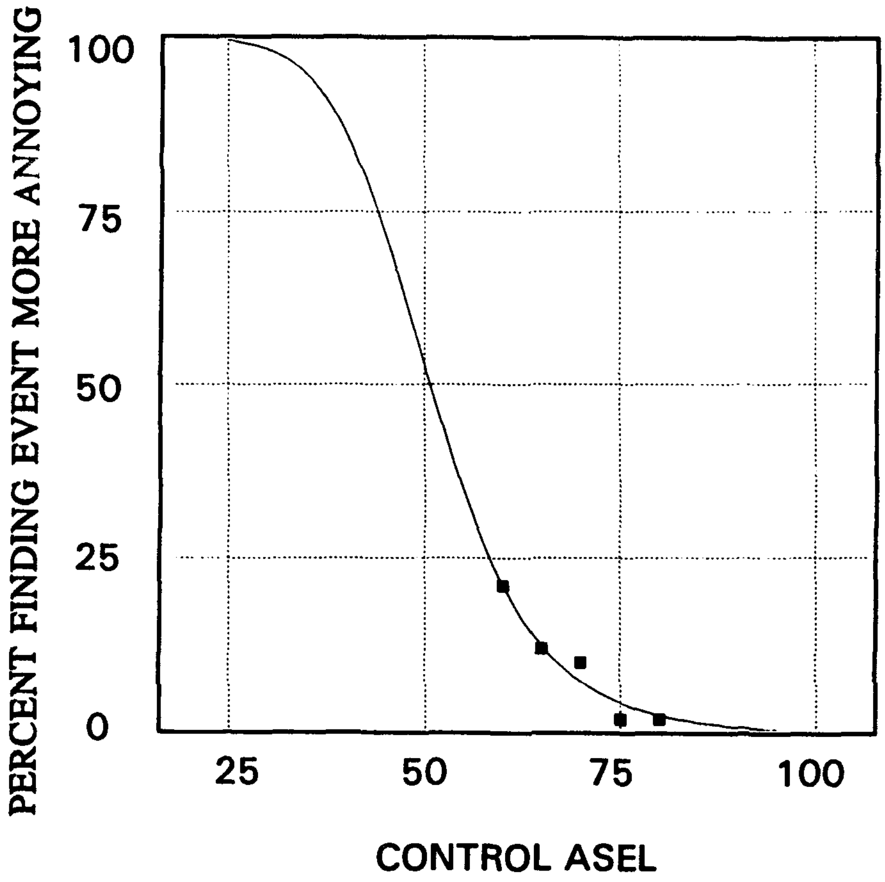


Figure E17

Test Source: Large Blast
Condition: Windows Open
Control Source: White Noise
Data Included: Set 6

Table E17

LARGE BLAST, SET 6–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	−0.3	100.321	100.321	0.0
2	5.0	100.0	100.0	−0.001	−0.001	500.0
3	10.0	100.0	100.0	−0.000	−0.000	1000.0
4	15.0	100.0	100.0	0.007	0.007	1500.0
5	60.0	21.0	21.2	−0.168	−0.798	5001.1
6	65.0	12.0	12.5	−0.461	−3.846	5083.4
7	70.0	10.0	7.3	2.724	27.243	5131.6
8	75.0	2.0	4.3	−2.259	−112.957	5159.8
9	80.0	2.0	2.5	−0.499	−24.944	5176.3
10	110.0	0.0	−0.1	0.079	0.000	5196.4
11	115.0	0.0	−0.1	0.150	0.000	5195.9
12	120.0	0.0	−0.2	0.198	0.000	5195.0
13	125.0	0.0	−0.2	0.231	0.000	5193.9
X@50Y	50.7					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	1.0					
r2	1.0					
Fit StdErr	1.2					
F−stat	5780.0					
Confidence	90.0					
A	100.0	C	50.8			
A StdErr	0.6	C StdErr	1.2			
A t	165.5	C t	40.8			
A ConfLimits	98.9	C ConfLimits	48.5			
	101.1		53.1			
B	−100.3	D	−7.8			
B StdErr	0.9	D StdErr	1.0			
B t	−113.3	D t	−8.2			
B ConfLimits	−101.9	D ConfLimits	−9.6			
	−98.7		−6.0			

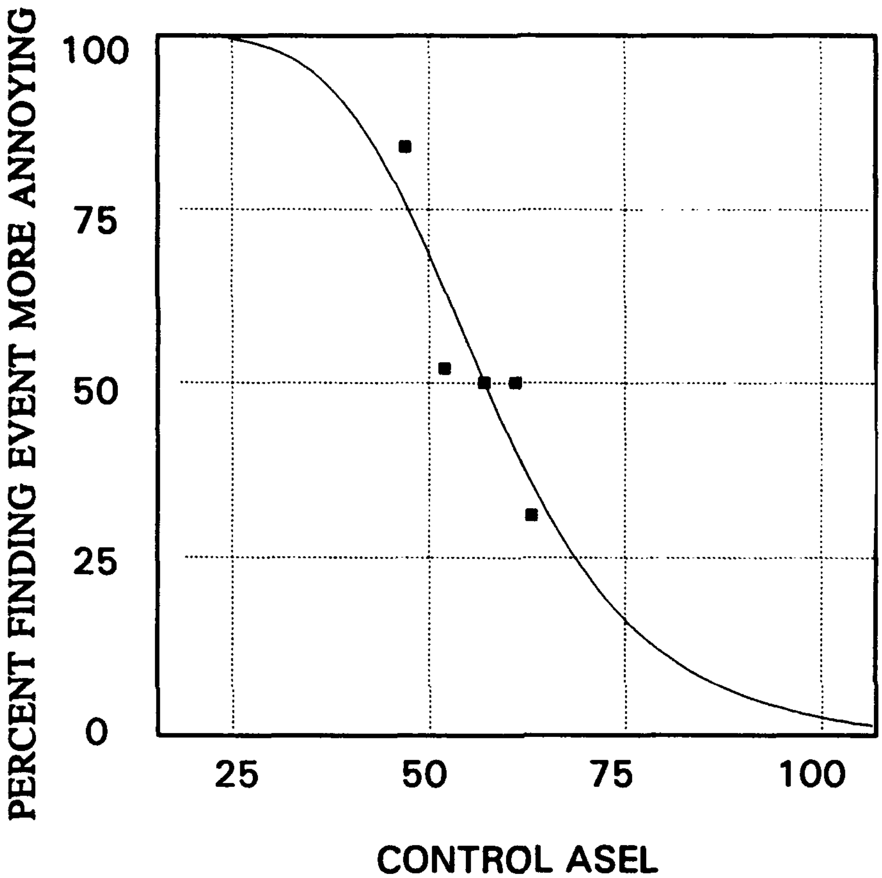


Figure E18

Test Source: Large Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 7

Table E18

LARGE BLAST, SET 7–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.248	−0.248	0.0
2	5.0	100.0	100.2	−0.248	−0.248	501.2
3	10.0	100.0	100.2	−0.245	−0.245	1002.5
4	15.0	100.0	100.2	−0.207	−0.207	1503.6
5	47.0	84.0	75.9	8.085	9.625	4522.2
6	52.0	52.0	63.5	−11.460	−22.039	4871.4
7	57.0	50.0	50.2	−0.238	−0.476	5155.6
8	61.0	50.0	40.3	9.710	19.420	5336.3
9	63.0	31.0	35.8	−4.753	−15.331	5412.3
10	110.0	0.0	0.7	−0.735	0.000	5909.7
11	115.0	0.0	0.2	−0.233	0.000	5912.0
12	120.0	0.0	−0.1	0.143	0.000	5912.2
13	125.0	0.0	−0.4	0.428	0.000	5910.7
X@50Y	57.1					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	5.9					
F−stat	202.0					
Confidence	90.0					
A	−1.5	C	57.3			
A StdErr	3.6	C StdErr	1.5			
A t	−0.4	C t	37.5			
A ConfLimits	−8.1	C ConfLimits	54.5			
	5.1		60.1			
B	101.8	D	5.8			
B StdErr	4.8	D StdErr	1.3			
B t	21.1	D t	4.6			
B ConfLimits	92.9	D ConfLimits	3.5			
	110.6		8.2			

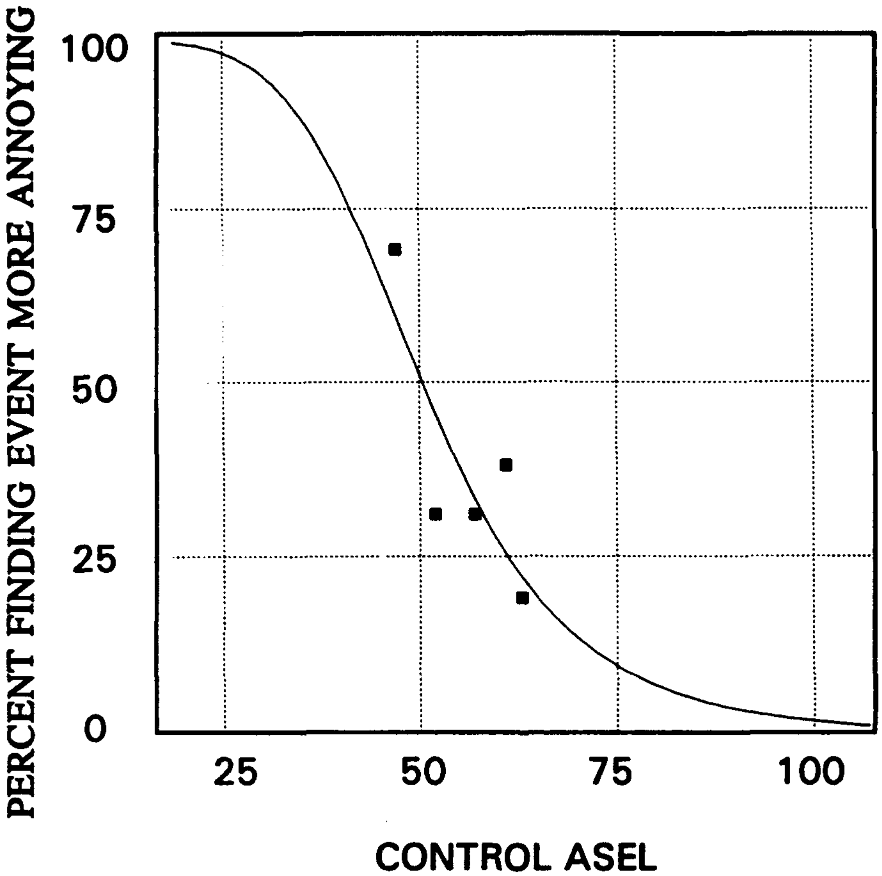


Figure E19

Test Source: Small Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 7

Table E19 SMALL BLAST, SET 7–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	99.0	99.2	–0.213	–0.216	0.0
2	5.0	99.0	99.2	–0.213	–0.215	496.1
3	10.0	99.0	99.2	–0.203	–0.205	992.1
4	15.0	99.0	99.1	–0.106	–0.107	1488.0
5	47.0	69.0	59.6	9.407	13.633	4312.3
6	52.0	31.0	45.6	–14.579	–47.028	4574.9
7	57.0	31.0	33.3	–2.293	–7.397	4771.0
8	61.0	38.0	25.4	12.648	33.285	4887.7
9	63.0	19.0	22.0	–3.029	–15.940	4935.0
10	110.0	0.0	0.7	–0.704	0.000	5232.6
11	115.0	0.0	0.4	–0.429	0.000	5235.4
12	120.0	0.0	0.2	–0.222	0.000	5237.0
13	125.0	0.0	0.1	–0.064	0.000	5237.7
X@50Y	50.4					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	7.3					
F–stat	132.1					
Confidence	90.0					
A	–0.6	C	50.6			
A StdErr	4.2	C StdErr	1.9			
A t	–0.1	C t	27.2			
A ConfLimits	–8.2	C ConfLimits	47.2			
	7.1		54.0			
B	99.8	D	5.6			
B StdErr	5.6	D StdErr	1.6			
B t	17.8	D t	3.6			
B ConfLimits	89.5	D ConfLimits	2.7			
	110.1		8.5			

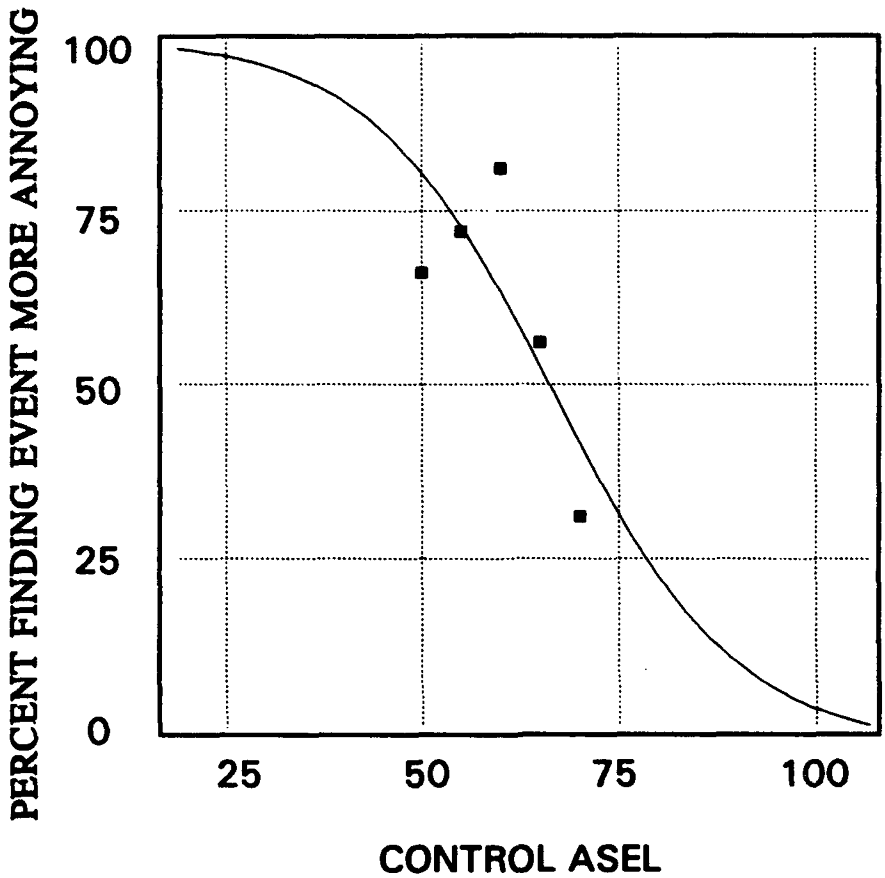


Figure E20

Test Source: Large Blast
Condition: Windows Open
Control Source: White Noise
Data Included: Set 7

Table E20

LARGE BLAST, SET 7–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.5	0.542	0.542	0.0
2	5.0	100.0	99.3	0.709	0.709	496.9
3	10.0	100.0	99.0	0.964	0.964	992.8
4	15.0	100.0	98.6	1.357	1.357	1487.0
5	50.0	66.0	80.4	−14.430	−21.863	4745.4
6	55.0	72.0	72.7	−0.698	−0.969	5129.0
7	60.0	81.0	63.2	17.750	21.914	5469.5
8	65.0	56.0	52.6	3.402	6.075	5759.4
9	70.0	31.0	41.6	−10.625	−34.275	5994.9
10	110.0	0.0	0.7	−0.675	0.000	6552.0
11	115.0	0.0	−0.1	0.112	0.000	6553.2
12	120.0	0.0	−0.6	0.627	0.000	6551.3
13	125.0	0.0	−1.0	0.963	0.000	6547.3
X@50Y	66.2					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	8.5					
F−stat	97.3					
Confidence	90.0					
A	−1.6	C	66.6			
A StdErr	5.1	C StdErr	3.0			
A t	−0.3	C t	22.3			
A ConfLimits	−10.9	C ConfLimits	61.1			
	7.7		72.1			
B	101.3	D	−11.5			
B StdErr	7.5	D StdErr	3.9			
B t	13.5	D t	−2.9			
B ConfLimits	87.6	D ConfLimits	−18.7			
	115.1		−4.2			

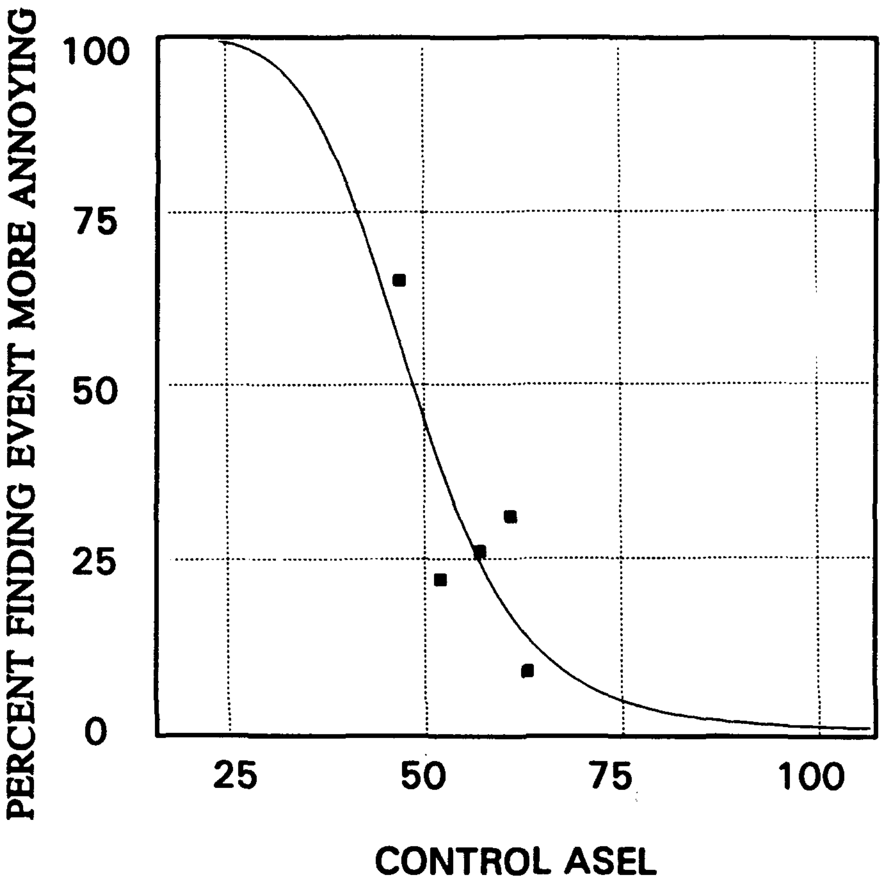


Figure E21

Test Source: Large Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 8

Table E21

LARGE BLAST, SET 8–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.2	−0.206	−0.206	0.0
2	5.0	100.0	100.2	−0.206	−0.206	501.0
3	10.0	100.0	100.2	−0.205	−0.205	1002.1
4	15.0	100.0	100.2	−0.183	−0.183	1503.0
5	47.0	65.0	56.1	8.924	13.730	4380.1
6	52.0	22.0	38.3	−16.333	−74.240	4615.1
7	57.0	26.0	24.5	1.491	5.736	4770.2
8	61.0	31.0	16.8	14.214	45.851	4851.9
9	63.0	9.0	13.9	−4.878	−54.202	4882.4
10	110.0	0.0	0.8	−0.751	0.000	5047.6
11	115.0	0.0	0.7	−0.673	0.000	5051.1
12	120.0	0.0	0.6	−0.618	0.000	5054.3
13	125.0	0.0	0.6	−0.578	0.000	5057.3
X@50Y	48.6					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	8.0					
F–stat	116.2					
Confidence	90.0					
A	0.5	C	48.5			
A StdErr	4.1	C StdErr	1.8			
A t	0.1	C t	26.8			
A ConfLimits	−7.1	C ConfLimits	45.2			
	8.0		51.9			
B	99.7	D	7.1			
B StdErr	5.8	D StdErr	2.0			
B t	17.3	D t	3.5			
B ConfLimits	89.2	D ConfLimits	3.4			
	110.3		10.9			

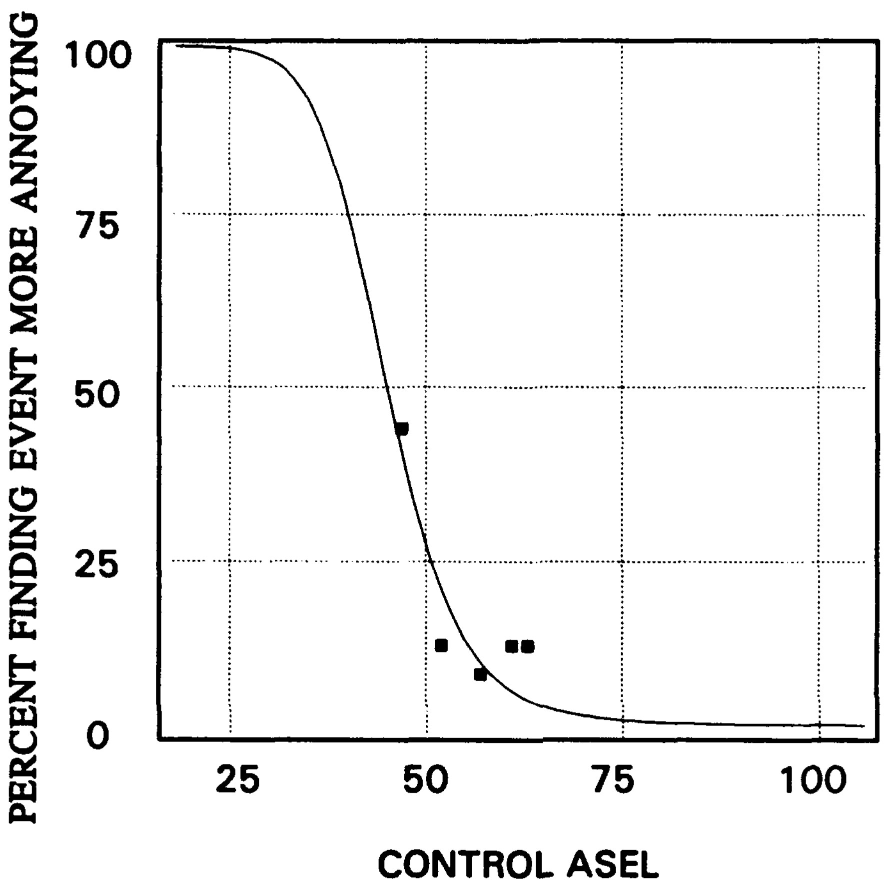


Figure E22

Test Source: Small Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 8

Table E22 SMALL BLAST, SET 8–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	99.0	99.1	−0.064	−0.065	0.0
2	5.0	99.0	99.1	−0.064	−0.065	495.3
3	10.0	99.0	99.1	−0.064	−0.065	990.6
4	15.0	99.0	99.1	−0.062	−0.063	1486.0
5	47.0	44.0	40.5	3.500	7.955	4275.7
6	52.0	13.0	21.0	−7.979	−61.377	4425.2
7	57.0	9.0	10.7	−1.669	−18.543	4501.1
8	61.0	13.0	6.6	6.389	49.148	4534.8
9	63.0	13.0	5.4	7.624	58.643	4546.7
10	110.0	0.0	1.9	−1.909	0.000	4660.9
11	115.0	0.0	1.9	−1.903	0.000	4670.4
12	120.0	0.0	1.9	−1.900	0.000	4680.0
13	125.0	0.0	1.9	−1.898	0.000	4689.5
X@50Y	45.1					
Equation	y=a+b/(1+(x/c)^d)	[LogisticDoseRsp]				
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.6					
F–stat	362.5					
Confidence	90.0					
A	1.9	C	45.0			
A StdErr	2.2	C StdErr	1.2			
A t	0.8	C t	38.5			
A ConfLimits	−2.2	C ConfLimits	42.9			
	6.0		47.2			
B	97.2	D	9.8			
B StdErr	3.2	D StdErr	2.4			
B t	30.2	D t	4.0			
B ConfLimits	91.3	D ConfLimits	5.4			
	103.1		14.3			

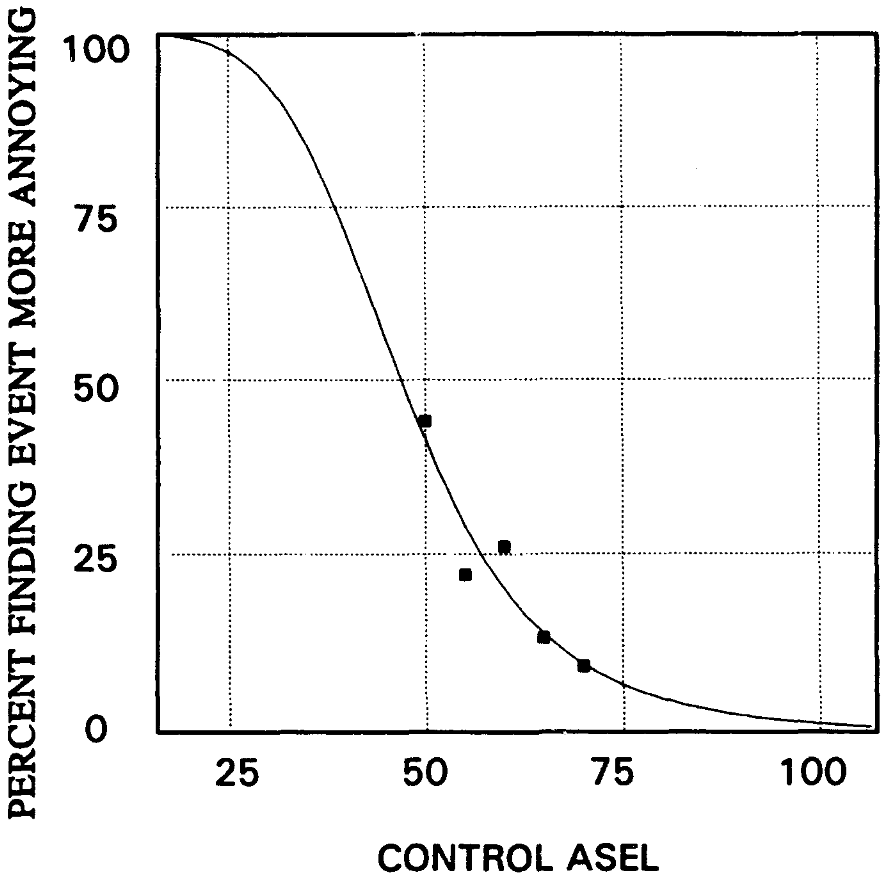


Figure E23

Test Source: Large Blast
Condition: Windows Open
Control Source: White Noise
Data Included: Set 8

Table E23

LARGE BLAST, SET 8–NOISE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.1	−0.062	−0.062	0.0
2	5.0	100.0	100.1	−0.062	−0.062	500.3
3	10.0	100.0	100.0	−0.045	−0.045	1000.6
4	15.0	100.0	99.9	0.105	0.105	1500.6
5	50.0	44.0	41.4	2.632	5.981	4360.6
6	55.0	22.0	29.2	−7.167	−32.578	4535.6
7	60.0	26.0	20.1	5.934	22.823	4657.5
8	65.0	13.0	13.7	−0.681	−5.238	4740.8
9	70.0	9.0	9.3	−0.329	−3.651	4797.7
10	110.0	0.0	0.3	−0.322	0.000	4914.2
11	115.0	0.0	0.1	−0.132	0.000	4915.4
12	120.0	0.0	−0.0	0.010	0.000	4915.6
13	125.0	0.0	−0.1	0.119	0.000	4915.3
X@50Y	47.0					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.2					
F−stat	730.0					
Confidence	90.0					
A	−0.5	C	47.1			
A StdErr	1.9	C StdErr	1.3			
A t	−0.3	C t	35.9			
A ConfLimits	−4.0	C ConfLimits	44.7			
	2.9		49.5			
B	100.6	D	5.6			
B StdErr	2.5	D StdErr	0.9			
B t	40.2	D t	5.9			
B ConfLimits	96.0	D ConfLimits	3.9			
	105.2		7.3			

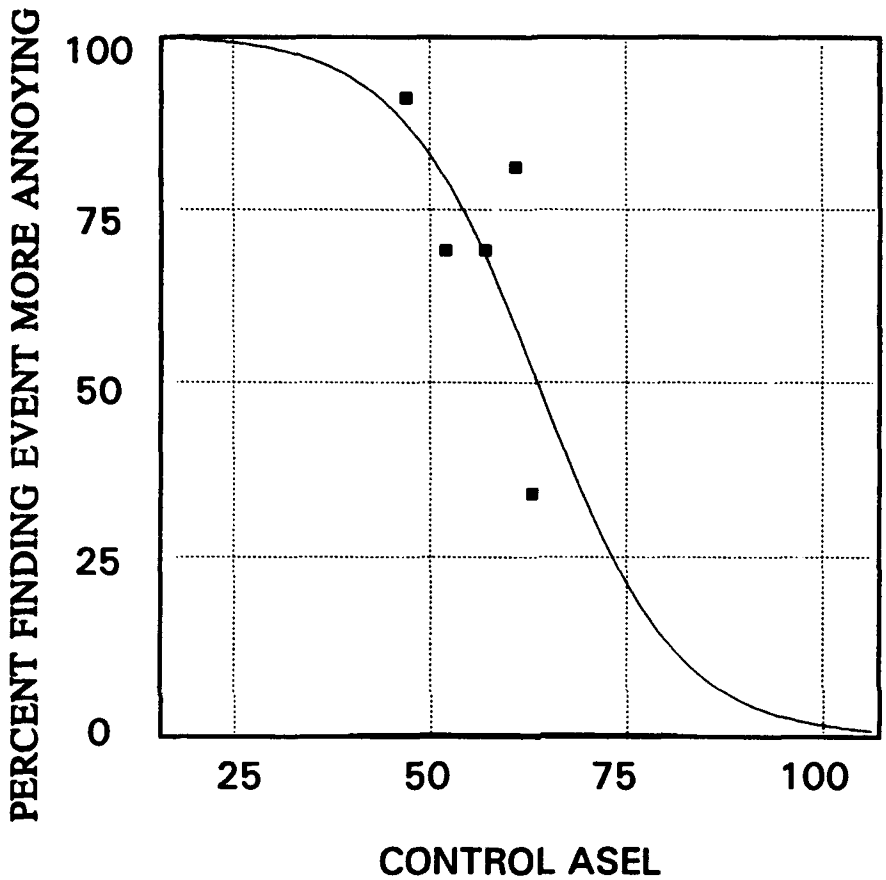


Figure E24

Test Source: Large Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 9

Table E24

LARGE BLAST, SET 9—VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.0	0.033	0.033	0.0
2	5.0	100.0	99.9	0.084	0.084	499.7
3	10.0	100.0	99.8	0.174	0.174	999.1
4	15.0	100.0	99.7	0.333	0.333	1497.9
5	47.0	91.0	87.3	3.703	4.069	4583.8
6	52.0	69.0	79.4	−10.424	−15.108	5001.8
7	57.0	69.0	68.4	0.562	0.814	5372.8
8	61.0	81.0	57.7	23.251	28.706	5625.6
9	63.0	34.0	52.0	−18.038	−53.052	5735.4
10	110.0	0.0	0.2	−0.156	0.000	6358.8
11	115.0	0.0	−0.1	0.057	0.000	6359.0
12	120.0	0.0	−0.2	0.177	0.000	6358.4
13	125.0	0.0	−0.2	0.244	0.000	6357.3
X@50Y	63.7					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	0.9					
r2	1.0					
Fit StdErr	10.5					
F−stat	66.6					
Confidence	90.0					
A	−0.3	C	63.8			
A StdErr	5.4	C StdErr	3.2			
A t	−0.1	C t	20.0			
A ConfLimits	−10.2	C ConfLimits	57.9			
	9.5		69.6			
B	100.4	D	−8.7			
B StdErr	7.8	D StdErr	4.1			
B t	12.8	D t	−2.1			
B ConfLimits	86.0	D ConfLimits	−16.1			
	114.7		−1.3			

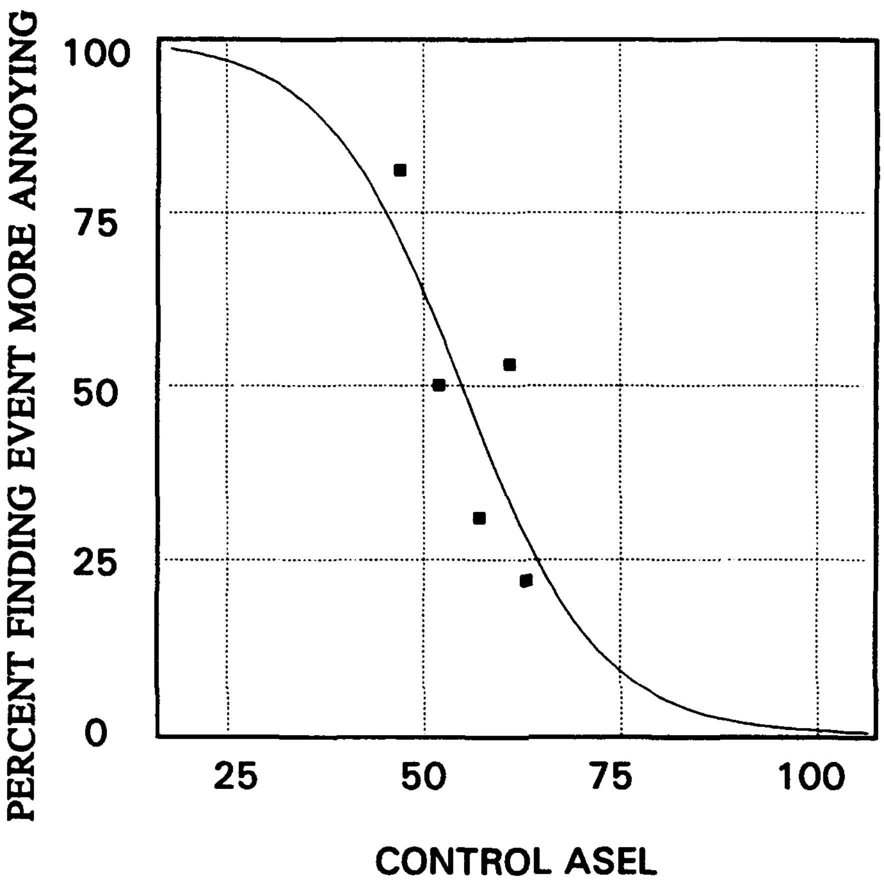


Figure E25

Test Source: Small Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 9

Table E25 SMALL BLAST, SET 9–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Resid	Cum Area
1	0.0	99.0	99.7	–0.693	–0.700	0.0
2	5.0	99.0	99.6	–0.554	–0.560	498.2
3	10.0	99.0	99.3	–0.309	–0.312	995.4
4	15.0	99.0	98.9	0.126	0.127	1490.9
5	47.0	81.0	71.2	9.829	12.135	4401.9
6	52.0	50.0	58.2	–8.158	–16.317	4726.1
7	57.0	31.0	43.9	–12.898	–41.606	4981.3
8	61.0	53.0	33.1	19.923	37.591	5134.9
9	63.0	22.0	28.2	–6.207	–28.215	5196.1
10	110.0	0.0	0.3	–0.349	0.000	5488.4
11	115.0	0.0	0.3	–0.273	0.000	5489.9
12	120.0	0.0	0.2	–0.230	0.000	5491.2
13	125.0	0.0	0.2	–0.207	0.000	5492.3
X@50Y	54.9					
Equation	y=a+b/(1+exp(–(x–c)/d)) [Sigmoid]					
Adjr2	0.9					
r2	1.0					
Fit StdErr	9.2					
F–stat	82.0					
Confidence	90.0					
A	99.9	C	54.9			
A StdErr	4.9	C StdErr	2.1			
A t	20.4	C t	26.1			
A ConfLimits	90.9	C ConfLimits	51.0			
	108.8		58.7			
B	–99.7	D	8.7			
B StdErr	6.9	D StdErr	2.7			
B t	–14.5	D t	3.2			
B ConfLimits	–112.3	D ConfLimits	3.7			
	–87.1		13.6			

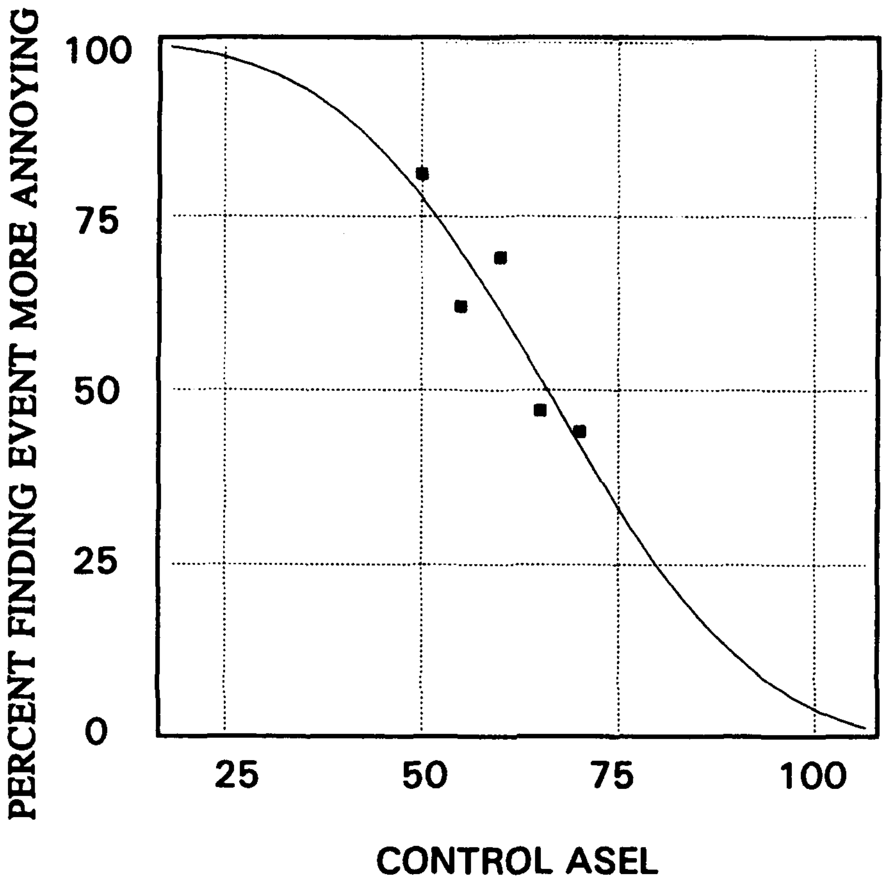


Figure E26

Test Source: Large Blast
Condition: Windows Open
Control Source: White Noise
Data Included: Set 9

Table E26

LARGE BLAST, SET 9—NOISE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.3	−0.283	−0.283	0.0
2	5.0		100.0	100.2	−0.180	−0.180	501.2
3	10.0		100.0	100.0	0.023	0.023	1001.6
4	15.0		100.0	99.6	0.405	0.405	1500.7
5	50.0		81.0	77.8	3.220	3.976	4745.2
6	55.0		62.0	70.0	−7.983	−12.876	5115.1
7	60.0		69.0	61.2	7.843	11.366	5443.3
8	65.0		47.0	51.7	−4.713	−10.028	5725.6
9	70.0		44.0	42.2	1.840	4.182	5960.2
10	110.0		0.0	1.0	−0.985	0.000	6574.9
11	115.0		0.0	0.1	−0.141	0.000	6577.5
12	120.0		0.0	−0.3	0.345	0.000	6576.9
13	125.0		0.0	−0.6	0.610	0.000	6574.4
X@50Y	65.9						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	4.3						
F−stat	389.0						
Confidence	90.0						
A	−0.9	C		66.0			
A StdErr	2.5	C StdErr		1.7			
A t	−0.3	C t		39.8			
A ConfLimits	−5.5	C ConfLimits		63.0			
	3.8			69.1			
B	101.2	D		−21.0			
B StdErr	3.6	D StdErr		3.6			
B t	27.9	D t		−5.8			
B ConfLimits	94.6	D ConfLimits		−27.7			
	107.9			−14.4			

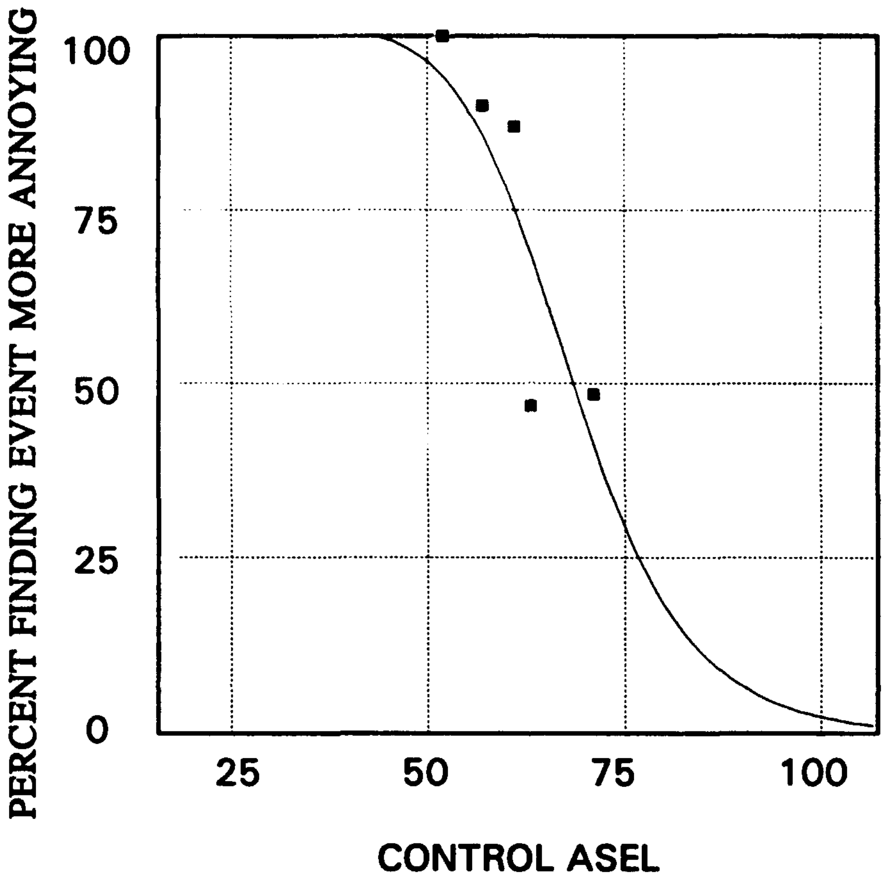


Figure E27

Test Source: Large Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 10

Table E27

LARGE BLAST, SET 10–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	101.3	−1.323	−1.323	0.0
2	5.0	100.0	101.3	−1.323	−1.323	506.6
3	10.0	100.0	101.3	−1.323	−1.323	1013.2
4	15.0	100.0	101.3	−1.323	−1.323	1519.8
5	52.0	100.0	94.2	5.833	5.833	5232.0
6	57.0	90.0	85.8	4.216	4.685	5683.9
7	61.0	87.0	75.4	11.625	13.363	6007.3
8	63.0	46.7	69.1	−22.353	−47.866	6151.8
9	71.0	48.4	41.3	7.095	14.659	6593.0
10	110.0	0.0	0.7	−0.726	0.000	7020.8
11	115.0	0.0	0.3	−0.347	0.000	7023.4
12	120.0	0.0	0.1	−0.105	0.000	7024.5
13	125.0	0.0	−0.1	0.052	0.000	7024.6
X@50Y	68.4					
Equation	y=a+b/(1+(x/c)^d) [LogisticDoseRsp]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	9.1					
F−stat	95.0					
Confidence	90.0					
A	−0.4	C	68.3			
A StdErr	4.9	C StdErr	2.3			
A t	−0.1	C t	29.9			
A ConfLimits	−9.3	C ConfLimits	64.1			
	8.5		72.5			
B	101.7	D	9.5			
B StdErr	6.8	D StdErr	2.9			
B t	14.9	D t	3.2			
B ConfLimits	89.2	D ConfLimits	4.1			
	114.2		14.8			

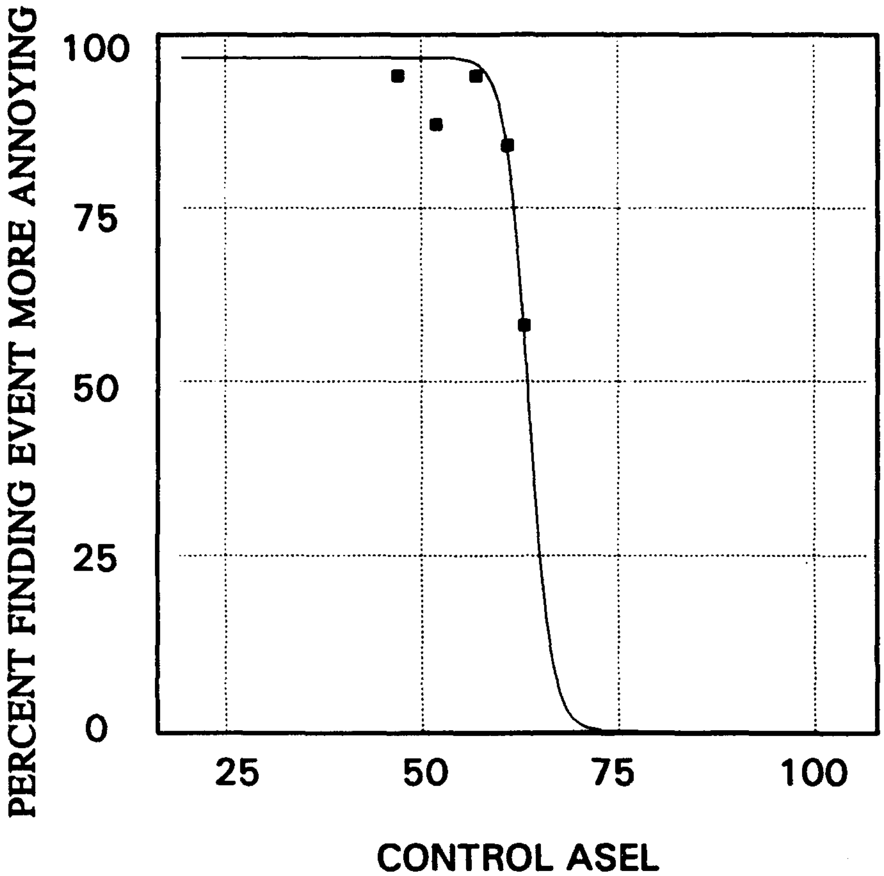


Figure E28

Test Source: Small Blast
Condition: Windows Open
Control Source: Vehicles
Data Included: Set 10

Table E28 SMALL BLAST, SET 10–VEHICLE CONTROLS

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	96.6	3.397	3.397	0.0
2	5.0	100.0	96.6	3.397	3.397	483.0
3	10.0	100.0	96.6	3.397	3.397	966.0
4	15.0	100.0	96.6	3.397	3.397	1449.0
5	47.0	94.0	96.6	−2.602	−2.768	4540.3
6	52.0	87.0	96.6	−9.579	−11.011	5023.3
7	57.0	94.0	95.8	−1.755	−1.867	5505.2
8	61.0	84.0	83.5	0.501	0.597	5873.2
9	63.0	58.0	58.2	−0.172	−0.296	6017.8
10	110.0	0.0	−0.0	0.005	0.000	6109.6
11	115.0	0.0	−0.0	0.005	0.000	6176.5
12	120.0	0.0	−0.0	0.005	0.000	6130.2
13	125.0	0.0	−0.0	0.005	0.000	6102.1
X@50Y	63.5					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	4.1					
F−stat	489.7					
Confidence	90.0					
A	−0.0	C	63.6			
A StdErr	2.0	C StdErr	0.3			
A t	−0.0	C t	184.0			
A ConfLimits	−3.7	C ConfLimits	62.9			
	3.7		64.2			
B	96.6	D	−1.4			
B StdErr	2.6	D StdErr	0.4			
B t	37.6	D t	−3.6			
B ConfLimits	91.9	D ConfLimits	−2.1			
	101.3		−0.7			

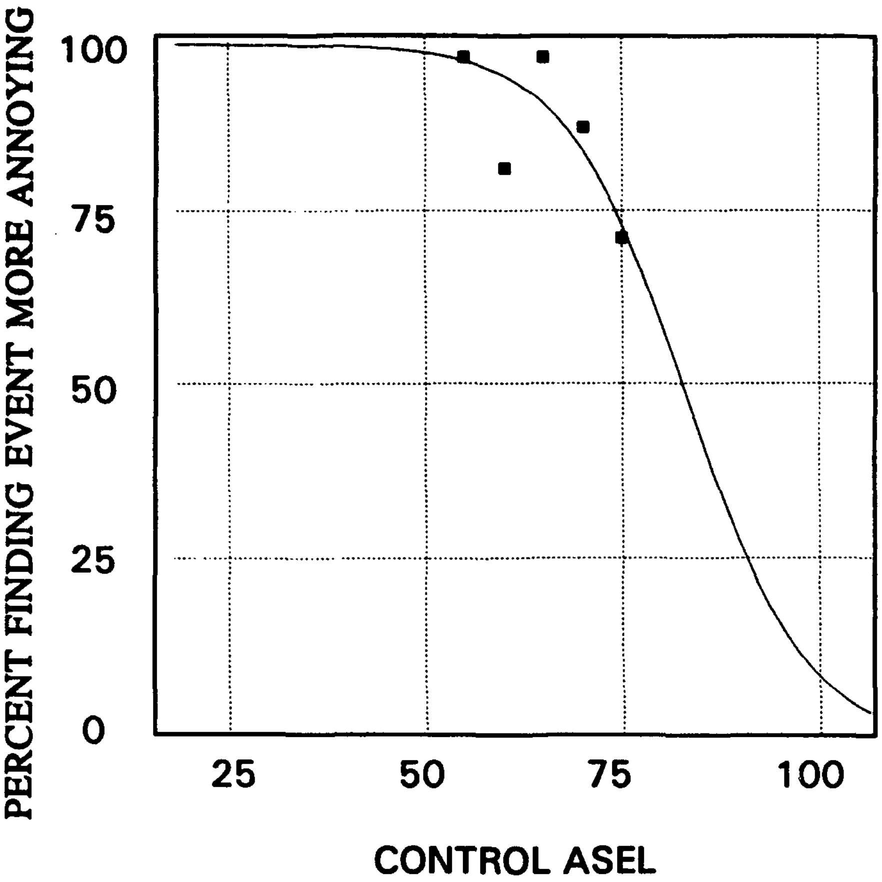


Figure E29

Test Source: Large Blast
Condition: Windows Open
Control Source: White Noise
Data Included: Set 10

Table E29

LARGE BLAST, SET 10–NOISE CONTROLS

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	98.9	1.135	1.135	0.0
2	5.0		100.0	98.9	1.136	1.136	494.3
3	10.0		100.0	98.9	1.139	1.139	988.6
4	15.0		100.0	98.9	1.145	1.145	1482.9
5	55.0		97.0	96.4	0.557	0.574	5419.2
6	60.0		81.0	94.3	−13.275	−16.388	5896.5
7	65.0		97.0	90.3	6.666	6.872	6359.0
8	70.0		87.0	83.6	3.446	3.961	6795.1
9	75.0		71.0	72.9	−1.913	−2.695	7188.0
10	110.0		0.0	1.4	−1.411	0.000	8144.0
11	115.0		0.0	0.1	−0.115	0.000	8147.5
12	120.0		0.0	−0.6	0.567	0.000	8146.1
13	125.0		0.0	−0.9	0.923	0.000	8142.3
X@50Y	82.6						
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	5.2						
F−stat	298.6						
Confidence	90.0						
A	−1.3	C		82.9			
A StdErr	3.7	C StdErr		4.1			
A t	−0.4	C t		20.4			
A ConfLimits	−8.1	C ConfLimits		75.5			
	5.5			90.4			
B	100.2	D		−7.6			
B StdErr	5.0	D StdErr		2.7			
B t	20.2	D t		−2.8			
B ConfLimits	91.1	D ConfLimits		−12.5			
	109.3			−2.6			

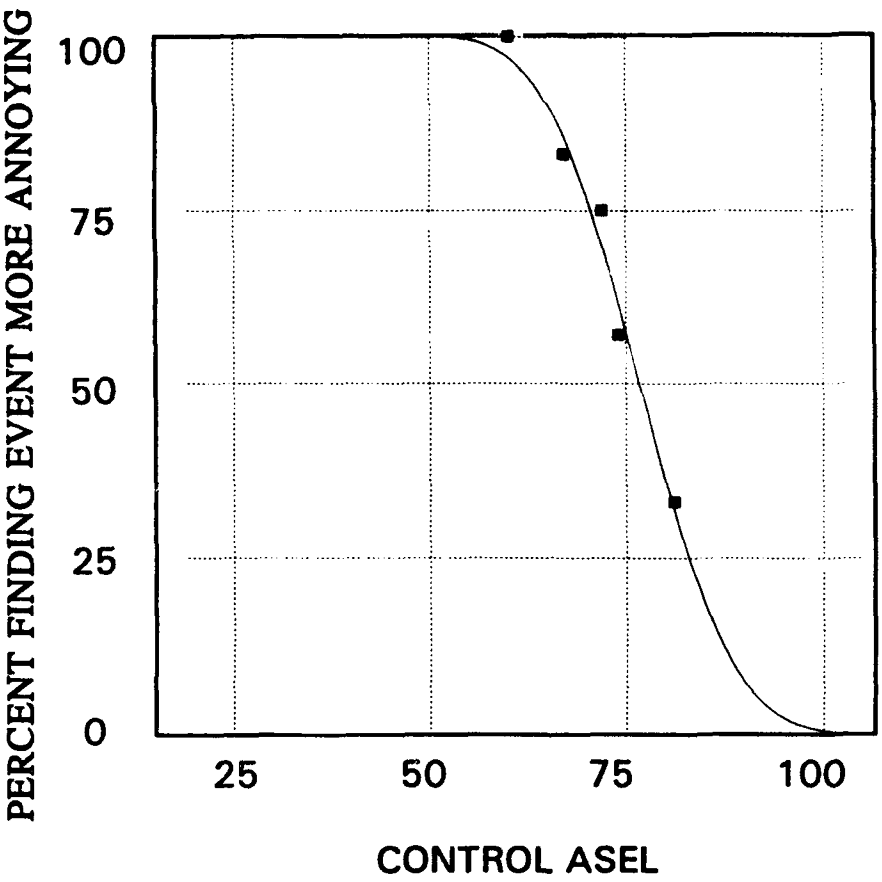


Figure E30

Test Source: Large Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 7

Table E30

LARGE BLAST-7, OUTDOOR-VEHICLE CONTROL

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.4	-0.416	-0.416	0.0
2	5.0		100.0	100.4	-0.416	-0.416	502.1
3	10.0		100.0	100.4	-0.416	-0.416	1004.2
4	15.0		100.0	100.4	-0.416	-0.416	1506.2
5	60.0		100.0	96.9	3.057	3.057	6012.4
6	67.0		83.0	85.8	-2.764	-3.331	6658.7
7	72.0		75.0	69.8	5.245	6.993	7050.3
8	74.0		57.0	61.7	-4.707	-8.258	7181.9
9	81.0		33.0	32.0	1.011	3.063	7508.7
10	110.0		0.0	0.1	-0.055	0.000	7699.8
11	115.0		0.0	0.0	-0.042	0.000	7700.1
12	120.0		0.0	0.0	-0.041	0.000	7700.3
13	125.0		0.0	0.0	-0.041	0.000	7700.5
X@50Y	76.7						
Equation	y=a+b0.5(1+erf((x-c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	2.8						
F-stat	1041.8						
Confidence	90.0						
A	0.0	C		76.7			
A StdErr	1.4	C StdErr		0.5			
A t	0.0	C t		161.0			
A ConfLimits	-2.5	C ConfLimits		75.8			
	2.6			77.5			
B	100.4	D		-9.2			
B StdErr	1.9	D StdErr		0.8			
B t	52.4	D t		-11.9			
B ConfLimits	96.9	D ConfLimits		-10.6			
	103.9			-7.8			

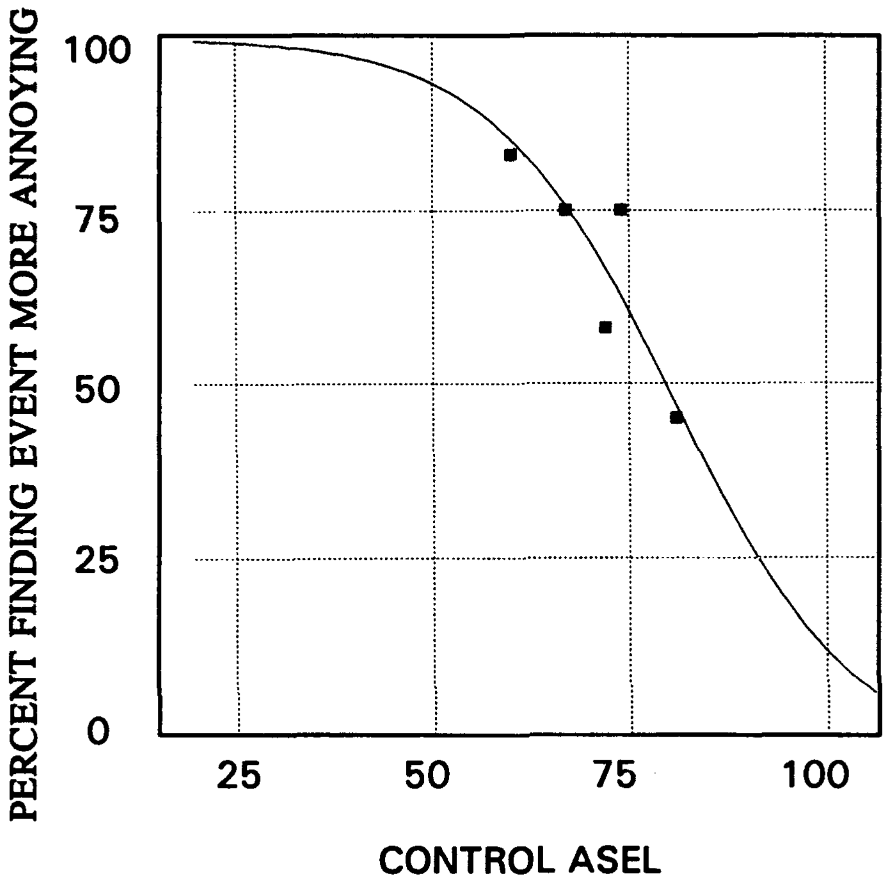


Figure E31

Test Source: Small Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 7

Table E31 SMALL BLAST−7, OUTDOOR−VEHICLE CONTROL

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	99.8	0.230	0.230	0.0
2	5.0		100.0	99.7	0.279	0.279	498.7
3	10.0		100.0	99.6	0.353	0.353	997.2
4	15.0		100.0	99.5	0.469	0.469	1495.1
5	60.0		83.0	85.2	−2.210	−2.663	5812.7
6	67.0		75.0	75.7	−0.661	−0.881	6377.9
7	72.0		58.0	66.6	−8.584	−14.799	6734.3
8	74.0		75.0	62.5	12.512	16.683	6863.4
9	81.0		45.0	46.9	−1.897	−4.216	7247.0
10	110.0		0.0	3.1	−3.091	0.000	7838.8
11	115.0		0.0	0.6	−0.612	0.000	7847.6
12	120.0		0.0	−1.1	1.054	0.000	7846.2
13	125.0		0.0	−2.2	2.158	0.000	7838.0
X@50Y	79.6						
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	5.3						
F−stat	253.8						
Confidence	90.0						
A	−4.2	C		80.6			
A StdErr	4.8	C StdErr		2.5			
A t	−0.9	C t		31.8			
A ConfLimits	−13.0	C ConfLimits		75.9			
	4.6			85.2			
B	104.1	D		−11.4			
B StdErr	6.0	D StdErr		2.5			
B t	17.4	D t		−4.5			
B ConfLimits	93.1	D ConfLimits		−16.0			
	115.1			−6.8			

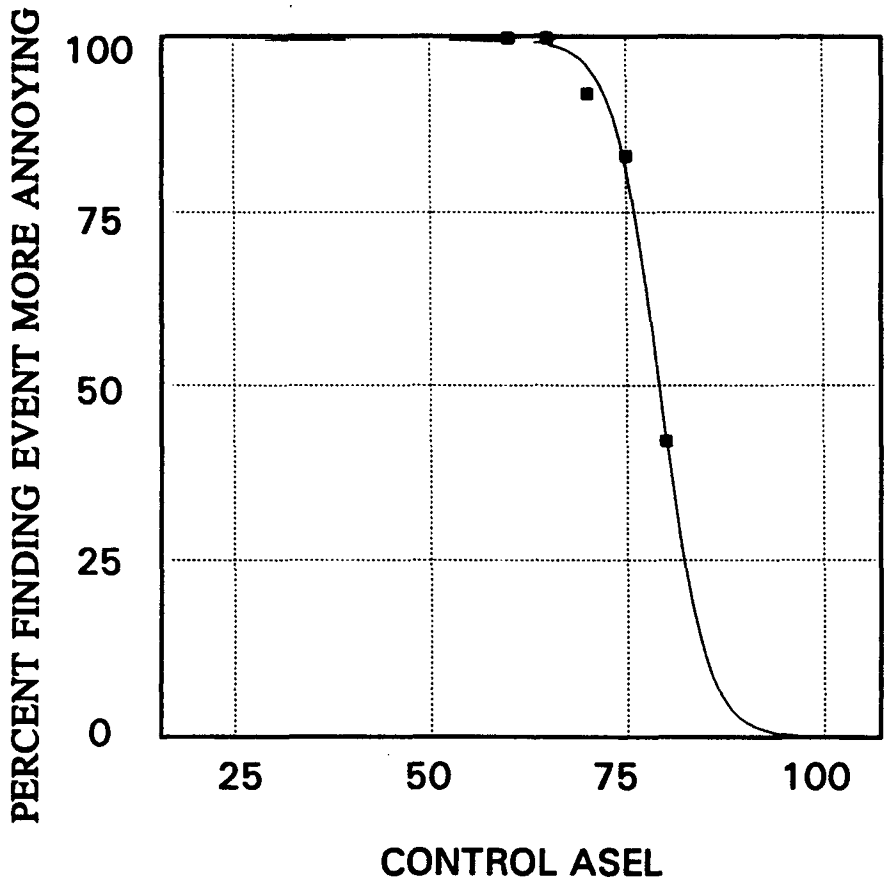


Figure E32

Test Source: Large Blast
Condition: Outdoors
Control Source: White Noise
Data Included: Set 7

Table E32 LARGE BLAST−7, OUTDOOR−NOISE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.7	0.318	0.318	0.0
2	5.0	100.0	99.7	0.318	0.318	498.4
3	10.0	100.0	99.7	0.318	0.318	996.8
4	15.0	100.0	99.7	0.318	0.318	1495.2
5	60.0	100.0	99.6	0.427	0.427	5980.6
6	65.0	100.0	99.0	0.959	0.959	6477.5
7	70.0	92.0	96.0	−4.003	−4.351	6967.2
8	75.0	83.0	81.2	1.754	2.113	7418.9
9	80.0	42.0	42.5	−0.526	−1.252	7735.9
10	110.0	0.0	−0.0	0.028	0.000	7890.9
11	115.0	0.0	−0.0	0.030	0.000	7891.0
12	120.0	0.0	−0.0	0.030	0.000	7890.7
13	125.0	0.0	−0.0	0.030	0.000	7889.2
X@50Y	79.1					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	1.5					
F−stat	3698.6					
Confidence	90.0					
A	−0.0	C	79.2			
A StdErr	0.8	C StdErr	0.2			
A t	−0.0	C t	477.9			
A ConfLimits	−1.4	C ConfLimits	78.9			
	1.4		79.5			
B	99.7	D	−2.8			
B StdErr	1.0	D StdErr	0.2			
B t	101.2	D t	−15.5			
B ConfLimits	97.9	D ConfLimits	−3.1			
	101.5		−2.5			

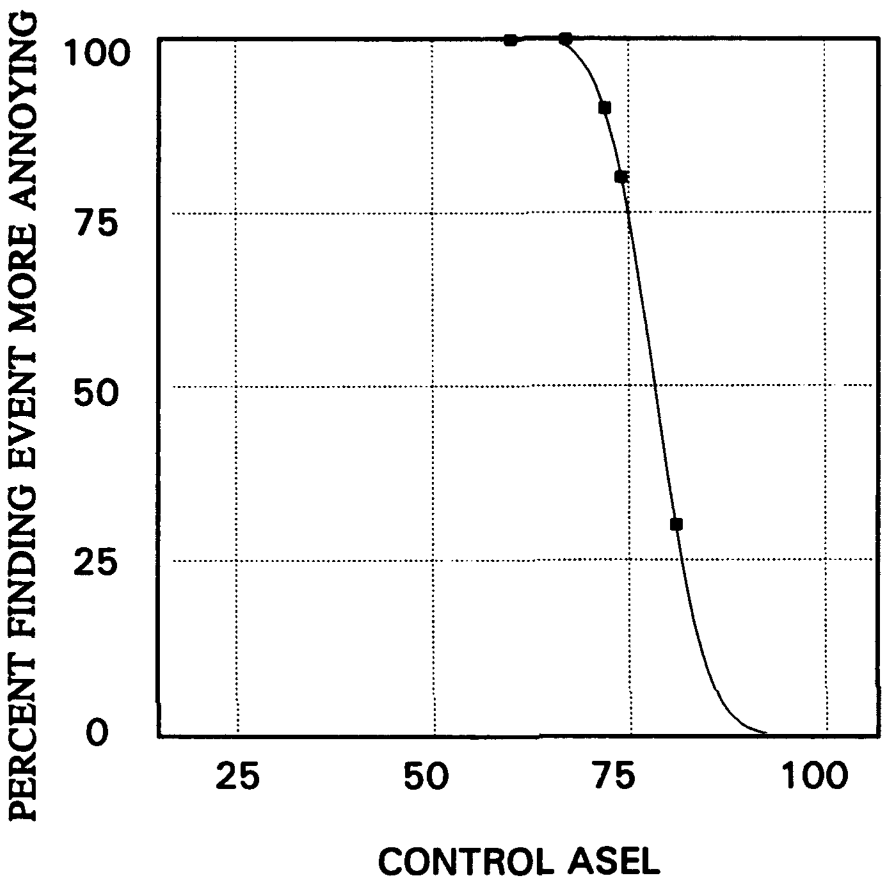


Figure E33

Test Source: Large Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 8

Table E33 **LARGE BLAST-8, OUTDOOR-VEHICLE CONTROL**

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.2	−0.196	−0.196	0.0
2	5.0		100.0	100.2	−0.196	−0.196	501.0
3	10.0		100.0	100.2	−0.196	−0.196	1002.0
4	15.0		100.0	100.2	−0.196	−0.196	1502.9
5	60.0		100.0	100.2	−0.182	−0.182	6011.7
6	67.0		100.0	98.9	1.055	1.055	6710.9
7	72.0		90.0	89.6	0.358	0.398	7188.6
8	74.0		80.0	80.5	−0.549	−0.686	7359.4
9	81.0		30.0	29.8	0.152	0.505	7752.1
10	110.0		0.0	0.0	−0.012	0.000	7847.8
11	115.0		0.0	0.0	−0.012	0.000	7847.8
12	120.0		0.0	0.0	−0.012	0.000	7847.9
13	125.0		0.0	0.0	−0.012	0.000	7848.0
X@50Y	78.3						
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	0.4						
F−stat	44809.2						
Confidence	90.0						
A	0.0	C		78.3			
A StdErr	0.2	C StdErr		0.1			
A t	0.1	C t		1464.0			
A ConfLimits	−0.4	C ConfLimits		78.2			
	0.4			78.4			
B	100.2	D		−5.0			
B StdErr	0.3	D StdErr		0.1			
B t	346.4	D t		−78.7			
B ConfLimits	99.7	D ConfLimits		−5.2			
	100.7			−4.9			

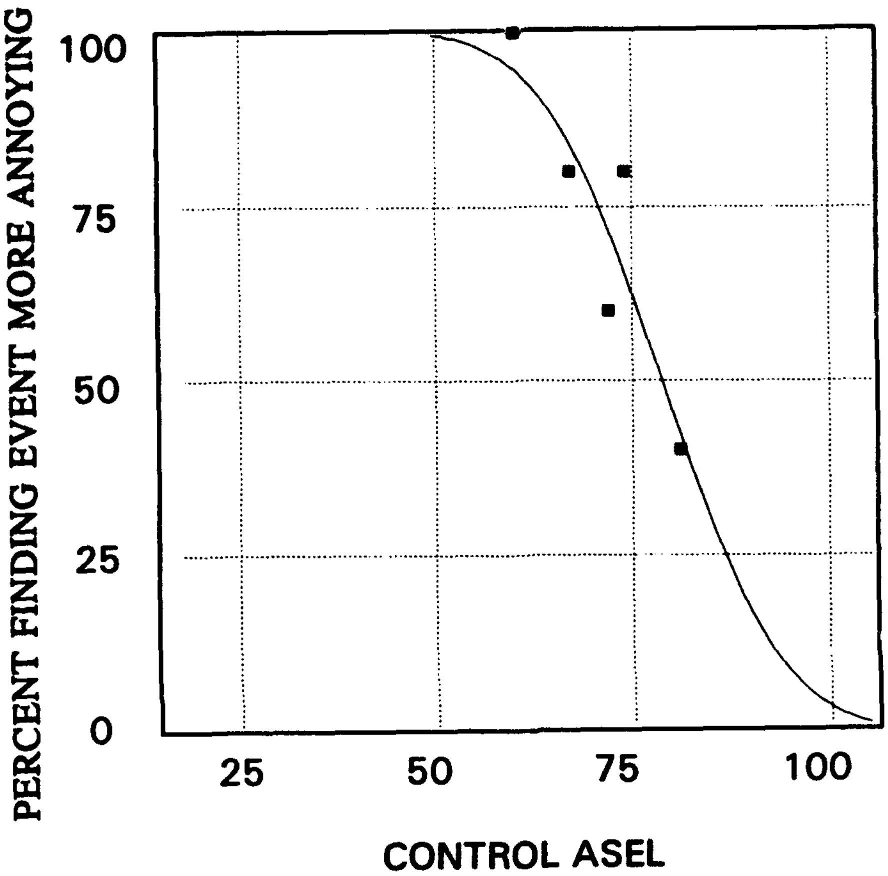


Figure E34

Test Source: Small Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 8

Table E34

SMALL BLAST-8, OUTDOOR-VEHICLE CONTROL

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	100.4	-0.401	-0.401	0.0
2	5.0		100.0	100.4	-0.401	-0.401	502.0
3	10.0		100.0	100.4	-0.401	-0.401	1004.0
4	15.0		100.0	100.4	-0.401	-0.401	1506.0
5	60.0		100.0	94.7	5.332	5.332	5995.1
6	67.0		80.0	84.2	-4.168	-5.210	6625.6
7	72.0		60.0	71.7	-11.668	-19.446	7016.9
8	74.0		80.0	65.6	14.368	17.960	7154.3
9	81.0		40.0	42.3	-2.349	-5.872	7533.0
10	110.0		0.0	0.2	-0.250	0.000	7894.5
11	115.0		0.0	-0.1	0.051	0.000	7894.8
12	120.0		0.0	-0.1	0.135	0.000	7894.3
13	125.0		0.0	-0.2	0.154	0.000	7893.6
X@50Y	78.7						
Equation	y=a+b0.5(1+erf((x-c)/(û2d))) [Cumulative]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	6.6						
F-stat	176.2						
Confidence	90.0						
A	-0.2	C		78.7			
A StdErr	3.4	C StdErr		1.6			
A t	-0.0	C t		48.9			
A ConfLimits	-6.3	C ConfLimits		75.7			
	6.0			81.6			
B	100.6	D		-11.8			
B StdErr	4.7	D StdErr		2.7			
B t	21.2	D t		-4.4			
B ConfLimits	91.9	D ConfLimits		-16.8			
	109.2			-6.9			

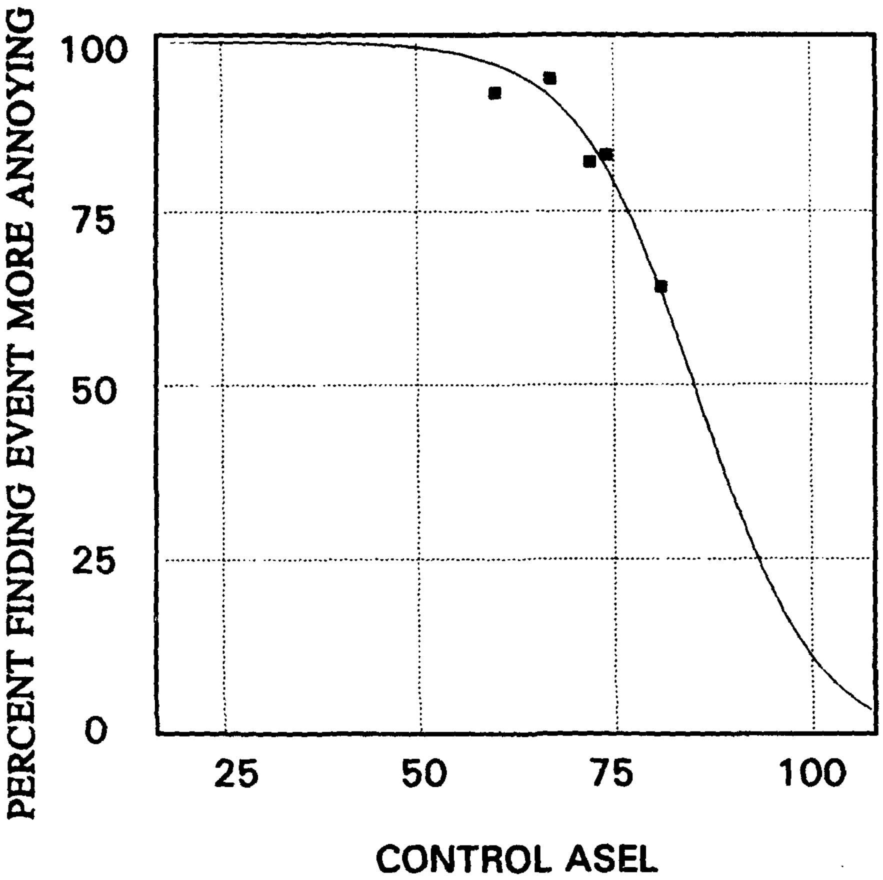


Figure E35

Test Source: Large Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 9

Table E35

LARGE BLAST-9, OUTDOOR-VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.4	0.610	0.610	0.0
2	5.0	100.0	99.4	0.611	0.611	496.9
3	10.0	100.0	99.4	0.614	0.614	993.9
4	15.0	100.0	99.4	0.618	0.618	1490.8
5	60.0	92.0	96.1	-4.082	-4.437	5938.1
6	67.0	94.0	91.4	2.594	2.760	6596.6
7	72.0	82.0	85.0	-2.951	-3.599	7038.9
8	74.0	83.0	81.3	1.659	1.999	7205.3
9	81.0	64.0	63.5	0.521	0.813	7716.7
10	110.0	0.0	2.0	-1.986	0.000	8425.3
11	115.0	0.0	0.2	-0.198	0.000	8430.2
12	120.0	0.0	-0.7	0.748	0.000	8428.6
13	125.0	0.0	-1.2	1.242	0.000	8423.5
X@50Y	85.1					
Equation	y=a+b/(1+exp(-(x-c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.2					
F-stat	1676.6					
Confidence	90.0					
A	-1.8	C	85.5			
A StdErr	1.5	C StdErr	1.1			
A t	-1.2	C t	79.7			
A ConfLimits	-4.5	C ConfLimits	83.5			
	1.0		87.5			
B	101.2	D	-7.5			
B StdErr	2.0	D StdErr	0.8			
B t	50.7	D t	-9.2			
B ConfLimits	97.5	D ConfLimits	-9.0			
	104.8		-6.0			

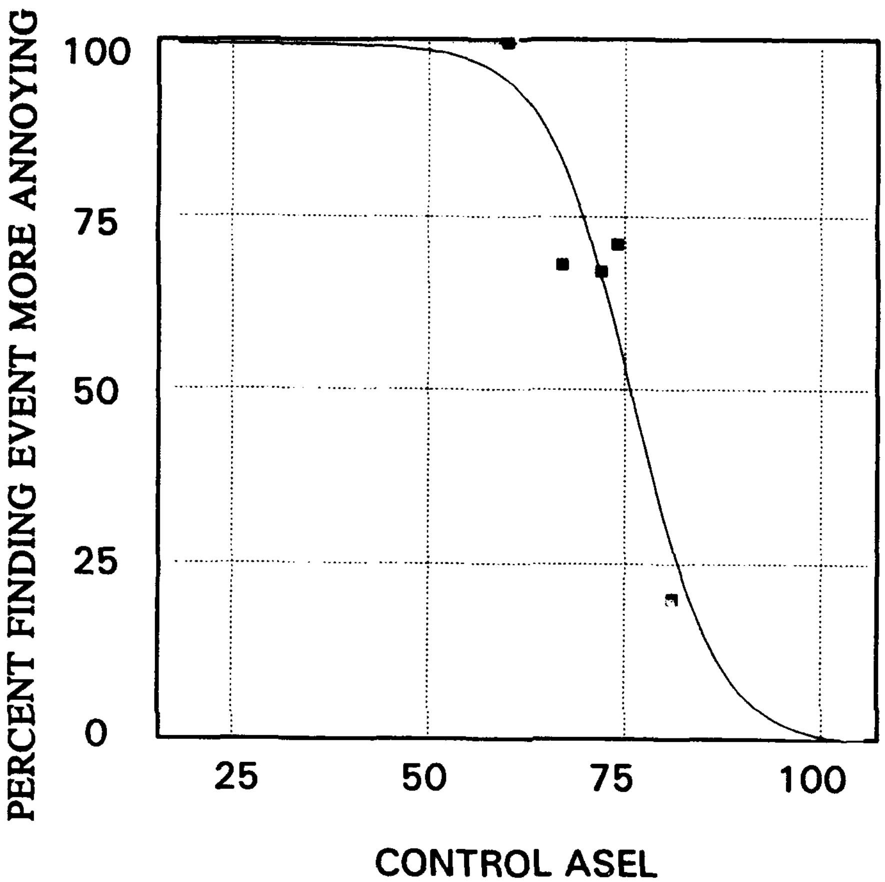


Figure E36

Test Source: Small Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 9

Table E36 SMALL BLAST-9,/OUTDOOR-VEHICLE CONTROL

XY Pt #	CONTROL ASEL		PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0		100.0	99.7	0.343	0.343	0.0
2	5.0		100.0	99.7	0.343	0.343	498.3
3	10.0		100.0	99.7	0.343	0.343	996.6
4	15.0		100.0	99.7	0.344	0.344	1494.8
5	60.0		100.0	94.4	5.569	5.569	5950.1
6	67.0		68.0	83.1	-15.074	-22.167	6578.1
7	72.0		67.0	66.5	0.547	0.816	6955.1
8	74.0		71.0	57.9	13.114	18.470	7079.6
9	81.0		20.0	27.5	-7.465	-37.324	7375.0
10	110.0		0.0	-0.4	0.370	0.000	7537.2
11	115.0		0.0	-0.5	0.485	0.000	7535.0
12	120.0		0.0	-0.5	0.531	0.000	7532.4
13	125.0		0.0	-0.5	0.549	0.000	7529.7
X@50Y	75.7						
Equation	y=a+b/(1+exp(-(x-c)/d)) [Sigmoid]						
Adjr2	1.0						
r2	1.0						
Fit StdErr	7.4						
F-stat	144.7						
Confidence	90.0						
A	-0.6	C		75.8			
A StdErr	3.7	C StdErr		1.2			
A t	-0.2	C t		62.0			
A ConfLimits	-7.4	C ConfLimits		73.6			
	6.2			78.[illegible]			
B	100.2	D		-5.5			
B StdErr	5.2	D StdErr		1.2			
B t	19.4	D t		-4.4			
B ConfLimits	90.7	D ConfLimits		-7.7			
	109.7			-3.2			

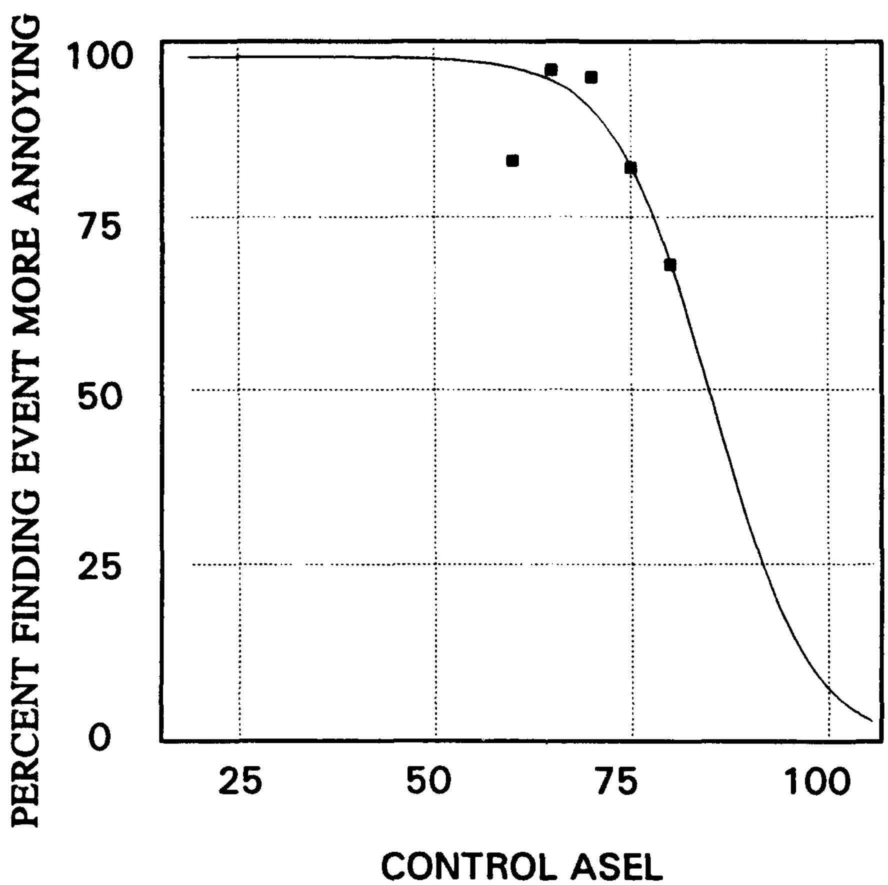


Figure E37

Test Source: Large Blast
Condition: Outdoors
Control Source: White Noise
Data Included: Set 9

Table E37

LARGE BLAST-9, OUTDOOR-NOISE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	98.0	2.032	2.032	0.0
2	5.0	100.0	98.0	2.032	2.032	489.8
3	10.0	100.0	98.0	2.032	2.032	979.7
4	15.0	100.0	98.0	2.033	2.033	1469.5
5	60.0	83.0	96.4	−13.394	−16.137	5868.4
6	65.0	96.0	94.5	1.525	1.588	6346.2
7	70.0	95.0	90.4	4.599	4.842	6809.6
8	75.0	82.0	82.4	−0.351	−0.429	7243.6
9	80.0	68.0	68.5	−0.509	−0.748	7623.3
10	110.0	0.0	1.0	−0.961	0.000	8321.2
11	115.0	0.0	0.0	−0.022	0.000	8323.4
12	120.0	0.0	−0.4	0.398	0.000	8322.3
13	125.0	0.0	−0.6	0.585	0.000	8319.8

X@50Y	84.9		
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]		
Adjr2	1.0		
r2	1.0		
Fit StdErr	5.0		
F−stat	325.9		
Confidence	90.0		
A	98.0	C	85.2
A StdErr	2.3	C StdErr	2.7
A t	42.6	C t	31.5
A ConfLimits	93.8	C ConfLimits	80.3
	102.2		90.2
B	−98.7	D	6.1
B StdErr	4.1	D StdErr	2.1
B t	−24.3	D t	2.9
B ConfLimits	−106.1	D ConfLimits	2.3
	−91.3		9.9

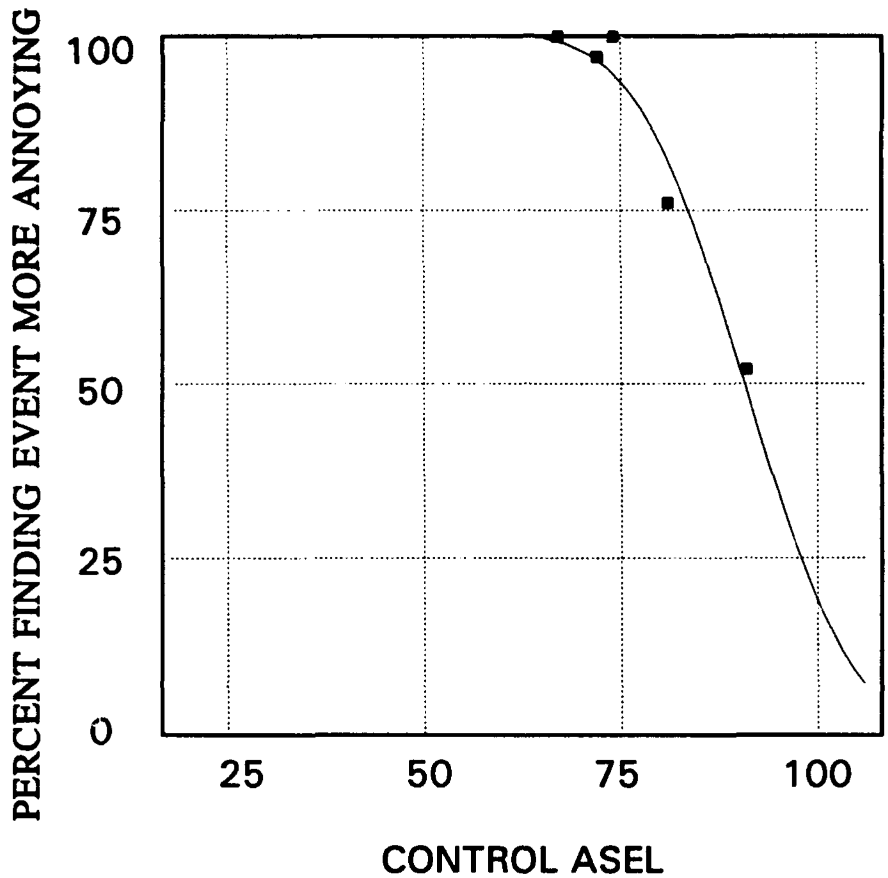


Figure E38

Test Source: Large Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 10

Table E38 LARGE BLAST−10, OUTDOOR−VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.6	−0.639	−0.639	0.0
2	5.0	100.0	100.6	−0.639	−0.639	503.2
3	10.0	100.0	100.6	−0.639	−0.639	1006.4
4	15.0	100.0	100.6	−0.639	−0.639	1509.6
5	67.0	100.0	99.2	0.755	0.755	6737.5
6	72.0	97.0	96.5	0.498	0.513	7227.9
7	74.0	100.0	94.6	5.426	5.426	7419.1
8	81.0	76.0	82.2	−6.195	−8.151	8043.4
9	91.0	52.0	49.2	2.840	5.462	8711.3
10	110.0	0.0	2.7	−2.683	0.000	9103.2
11	115.0	0.0	0.1	−0.082	0.000	9109.1
12	120.0	0.0	−0.9	0.861	0.000	9106.7
13	125.0	0.0	−1.1	1.138	0.000	9101.6
X@50Y	90.8					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	3.1					
F−stat	871.7					
Confidence	90.0					
A	−1.2	C	90.9			
A StdErr	1.9	C StdErr	0.9			
A t	−0.6	C t	104.6			
A ConfLimits	−4.7	C ConfLimits	89.3			
	2.3		92.4			
B	101.9	D	−10.8			
B StdErr	2.5	D StdErr	1.2			
B t	40.2	D t	−8.9			
B ConfLimits	97.2	D ConfLimits	−13.0			
	106.5		−8.6			

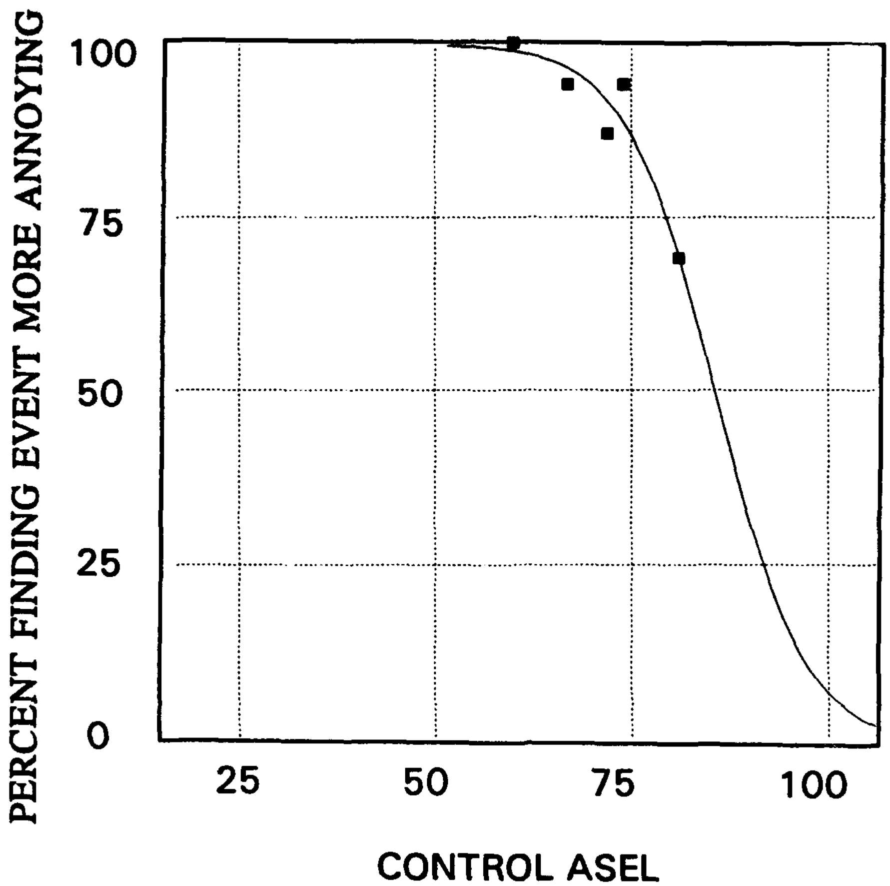


Figure E39

Test Source: Small Blast
Condition: Outdoors
Control Source: Vehicles
Data Included: Set 10

Table E39

SMALL BLAST−10, OUTDOOR−VEHICLE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	99.8	0.226	0.226	0.0
2	5.0	100.0	99.8	0.226	0.226	498.9
3	10.0	100.0	99.8	0.226	0.226	997.7
4	15.0	100.0	99.8	0.226	0.226	1496.6
5	60.0	100.0	98.7	1.256	1.256	5980.6
6	67.0	94.0	96.3	−2.290	−2.436	6664.9
7	72.0	87.0	91.7	−4.709	−5.413	7136.4
8	74.0	94.0	88.7	5.348	5.690	7316.9
9	81.0	69.0	69.5	−0.503	−0.729	7878.8
10	110.0	0.0	0.8	−0.780	0.000	8532.4
11	115.0	0.0	0.0	−0.002	0.000	8534.0
12	120.0	0.0	−0.3	0.322	0.000	8533.1
13	125.0	0.0	−0.5	0.456	0.000	8531.1
X@50Y	85.6					
Equation	y=a+b/(1+exp(−(x−c)/d)) [Sigmoid]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.6					
F−stat	1279.2					
Confidence	90.0					
A	−0.5	C	85.7			
A StdErr	1.4	C StdErr	1.2			
A t	−0.4	C t	70.0			
A ConfLimits	−3.1	C ConfLimits	83.5			
	2.0		88.0			
B	100.3	D	−5.6			
B StdErr	2.0	D StdErr	0.9			
B t	50.7	D t	−6.0			
B ConfLimits	96.7	D ConfLimits	−7.4			
	104.0		−3.9			

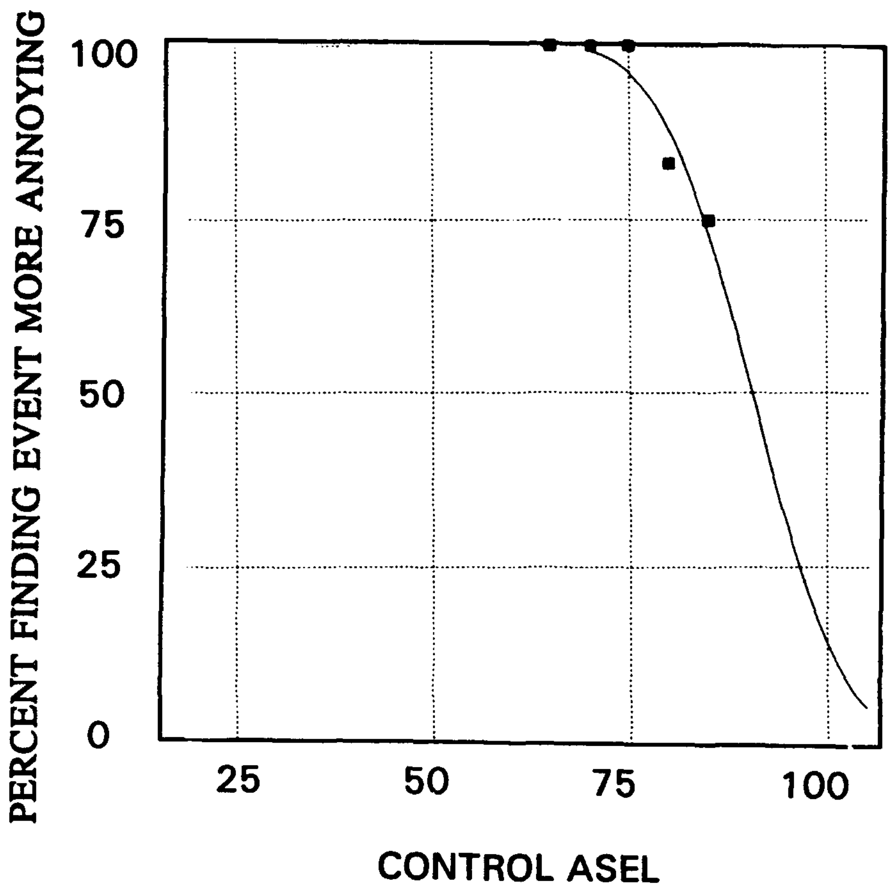


Figure E40

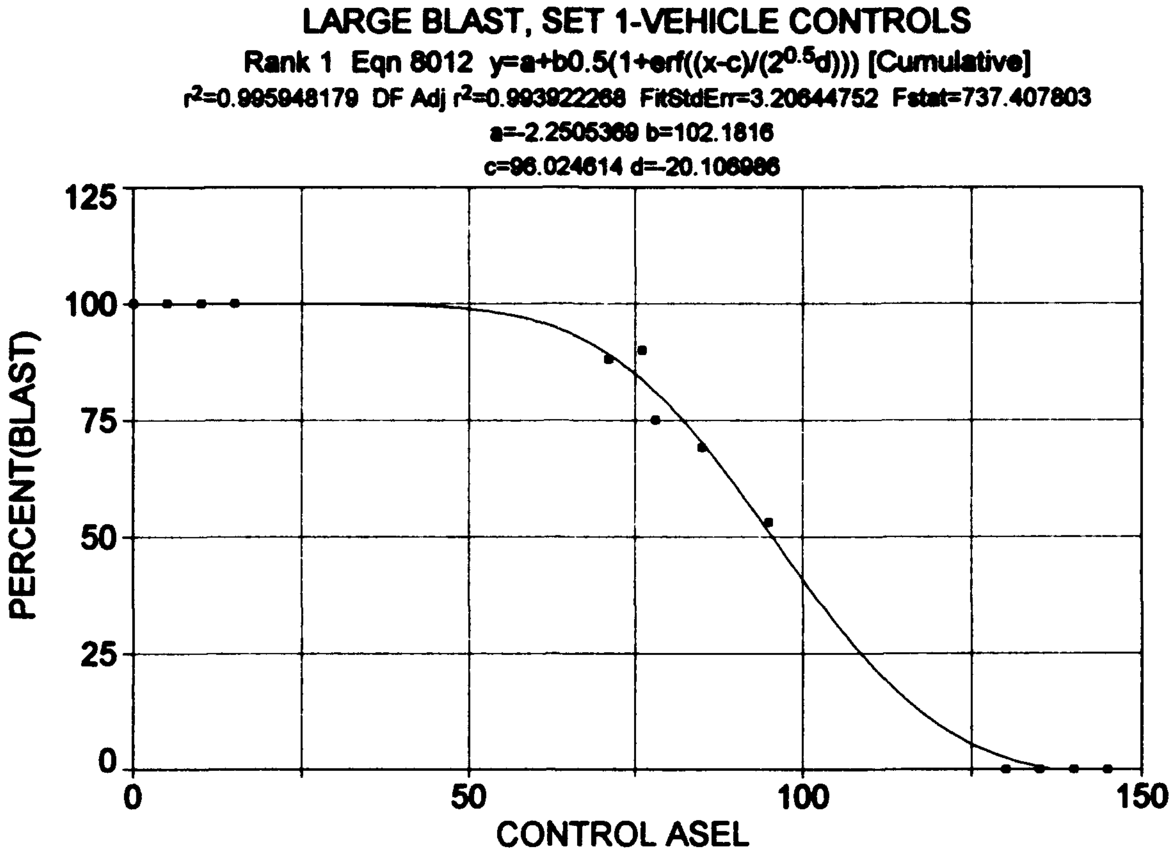
Test Source: Large Blast
Condition: Outdoors
Control Source: White Noise
Data Included: Set 10

Table E40 LARGE BLAST−10, OUTDOOR−NOISE CONTROL

XY Pt #	CONTROL ASEL	PERCENT	Y Predicted	Y Residual	Y % Residual	Cum Area
1	0.0	100.0	100.4	−0.391	−0.391	0.0
2	5.0	100.0	100.4	−0.391	−0.391	502.0
3	10.0	100.0	100.4	−0.391	−0.391	1003.9
4	15.0	100.0	100.4	−0.391	−0.391	1505.9
5	65.0	100.0	100.1	−0.145	−0.145	6524.7
6	70.0	100.0	99.2	0.801	0.801	7023.6
7	75.0	100.0	96.0	4.004	4.004	7513.0
8	80.0	83.0	87.9	−4.946	−5.959	7975.5
9	85.0	74.9	72.9	1.977	2.639	8380.7
10	110.0	0.0	1.1	−1.105	0.000	9069.5
11	115.0	0.0	−0.1	0.120	0.000	9071.3
12	120.0	0.0	−0.4	0.404	0.000	9069.8
13	125.0	0.0	−0.5	0.453	0.000	9067.6
X@50Y	90.5					
Equation	y=a+b0.5(1+erf((x−c)/(û2d))) [Cumulative]					
Adjr2	1.0					
r2	1.0					
Fit StdErr	2.3					
F−stat	1639.5					
Confidence	90.0					
A	−0.5	C	90.5			
A StdErr	1.3	C StdErr	1.2			
A t	−0.3	C t	77.2			
A ConfLimits	−2.9	C ConfLimits	88.3			
	1.9		92.6			
B	100.9	D	−9.1			
B StdErr	1.7	D StdErr	1.4			
B t	57.7	D t	−6.7			
B ConfLimits	97.6	D ConfLimits	−11.5			
	104.1		−6.6			

Appendix F: Evaluating the Degree of Annoyance Caused by Military Noise*

* Transition curves for blast noise with vehicle controls, for sets grouped as indicated on each page. Subjects located indoors, acoustical measurements outdoors; except the last page, that is outdoor subjects.



Rank 1 Eqn 8012 $y=a+b0.5(1+erf((x-c)/(2^{0.5}d)))$ [Cumulative]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9959481788	0.9939222683	3.2064475225	737.40780284

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	-2.25053688	2.449664309	-0.91871236	-7.80867290	3.307599139
b	102.1816032	3.093972178	33.02602523	95.16157272	109.2016338
c	96.02461404	1.831186259	52.43847454	91.86976626	100.1794618
d	-20.1069861	2.345746128	-8.57168040	-25.4293382	-14.7846340

Date	Time	File Source
Mar 31, 1994	4:13:46 PM	c:\tblcurve\munster\blast1hv.prn

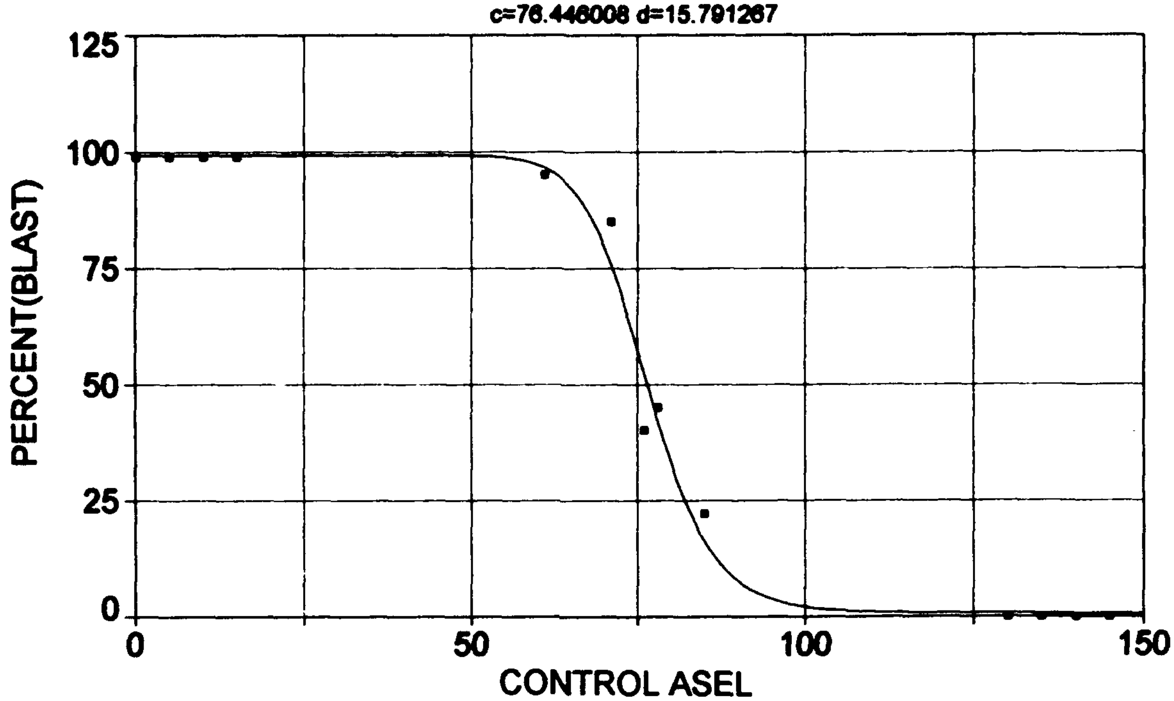
SMALL BLAST, SET 1-VEHICLE CONTROLS

Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2=0.988210081 DF Adj r^2=0.982315121 FitStdErr=5.56952237 Fstat=251.454672

a=0.67661515 b=98.60233

c=76.446008 d=15.791267



Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9882100809	0.9823151214	5.5695223720	251.45467226

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	0.676615154	2.762595551	0.244920091	-5.59154240	6.944772707
b	98.60233020	3.848881728	25.61843599	89.86945684	107.3352035
c	76.44600794	0.792538381	96.45716818	74.64778763	78.24422826
d	15.79126670	2.885557527	5.472518414	9.244116068	22.33841733

Date	Time	File Source
Mar 31, 1994	4:16:05 PM	c:\tblcurve\munster\blast1lv.prn

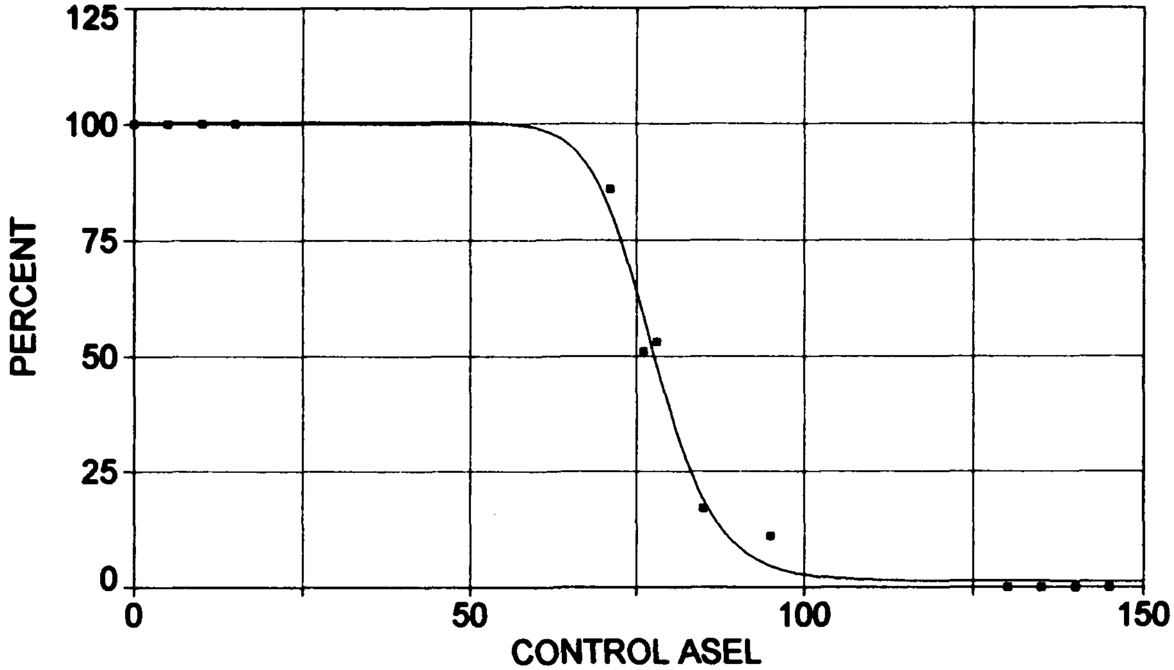
LARGE BLAST, SET 2&3-VEHICLE CONTROLS

Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2=0.993474644 DF Adj r^2=0.990211966 FitStdErr=4.15727495 Fstat=456.745036

a=1.2360152 b=99.127627

c=77.482467 d=16.543639



Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9934746441	0.9902119661	4.1572749513	456.74503638

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	1.236015246	1.957509104	0.631422477	-3.20545121	5.677481703
b	99.12762727	2.884474625	34.36592106	92.58293367	105.6723209
c	77.48246669	0.582979108	132.9077931	76.15972334	78.80521005
d	16.54363941	2.188635654	7.558882346	11.57776118	21.50951764

Date	Time	File Source
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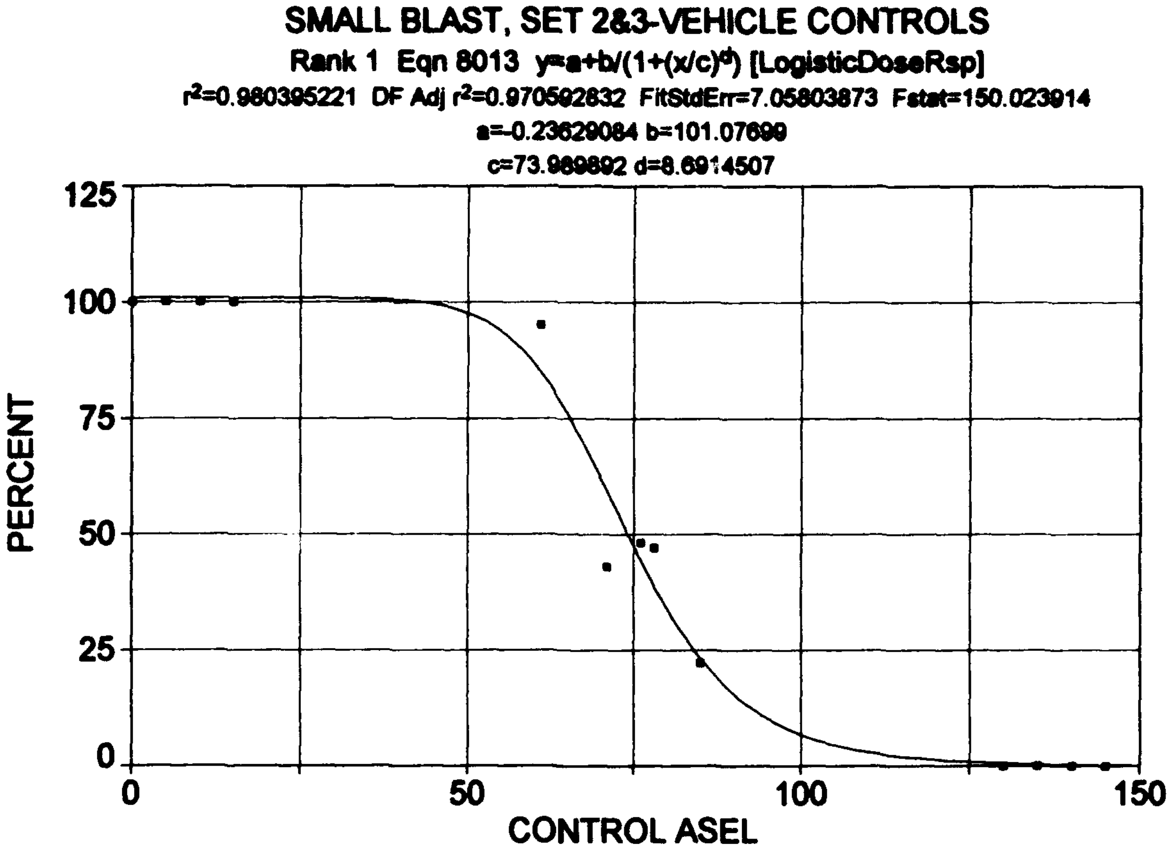


Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9803952211	0.9705928316	7.0580387327	150.02391396

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	-0.23629084	3.716991437	-0.06357046	-8.66991333	8.197331639
b	101.0769891	5.218281169	19.36978592	89.23703356	112.9169447
c	73.98989210	1.602781787	46.16342206	70.35327987	77.62650433
d	8.691450746	1.939652503	4.480931884	4.290499805	13.09240169

Date	Time	File Source
Mar 31, 1994	11:02:05 AM	c:\tblcurve\munster\bl23lv.prn

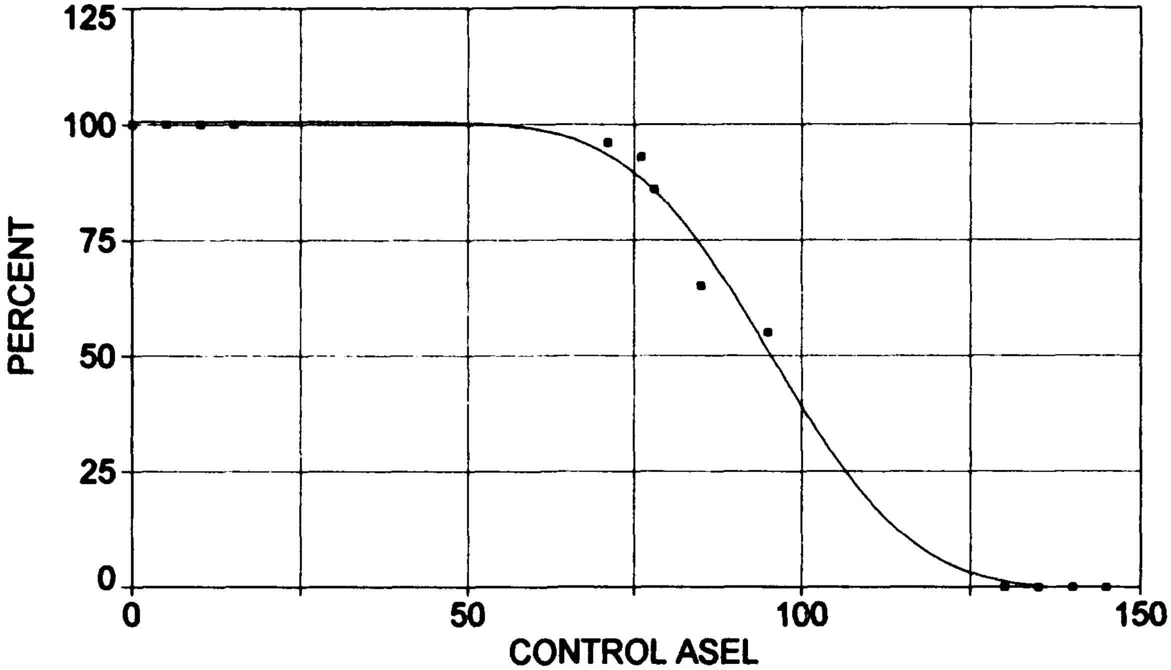
LARGE BLAST, SET 4&5-VEHICLE CONTROLS

Rank 1 Eqn 8012 $y=a+b0.5(1+erf((x-c)/(2^{0.5}d)))$ [Cumulative]

r^2=0.9947969 DF Adj r^2=0.992195349 FitStdErr=3.71664842 Fstat=573.579305

a=-0.70975506 b=101.26977

c=95.449276 d=-16.589103



Rank 1 Eqn 8012 $y=a+b0.5(1+erf((x-c)/(2^{0.5}d)))$ [Cumulative]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9947968996	0.9921953494	3.7166484224	573.57930512

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	-0.70975506	2.124043074	-0.33415286	-5.52907675	4.109566616
b	101.2697742	2.947391596	34.35911752	94.58232592	107.9572225
c	95.44927600	1.632056944	58.48403534	91.74624026	99.15231174
d	-16.5891034	2.209079620	-7.50950907	-21.6013678	-11.5768391

Date	Time	File Source
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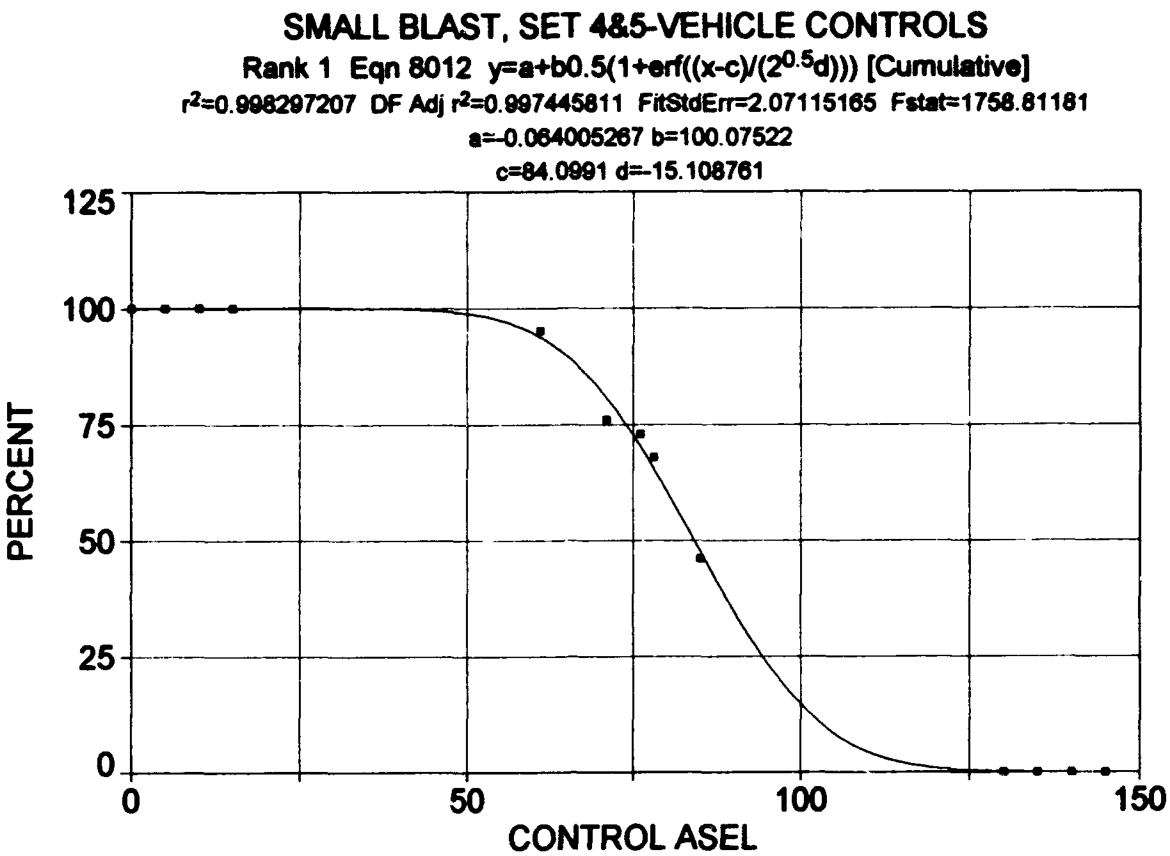


Rank 1 Eqn 8012 $y=a+b0.5(1+erf((x-c)/(2^{0.5}d)))$ [Cumulative]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9982972075	0.9974458112	2.0711516455	1758.8118086

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	-0.06400527	1.041574229	-0.06145051	-2.42727244	2.299261903
b	100.0752230	1.465874513	68.26997952	96.74924483	103.4012011
c	84.09909967	0.686058017	122.5830725	82.54247668	85.65572266
d	-15.1087610	1.243134430	-12.1537628	-17.9293557	-12.2881663

Date	Time	File Source
Mar 31, 1994	4:09:12 PM	c:\tblcurve\munster\bl45lv.prn

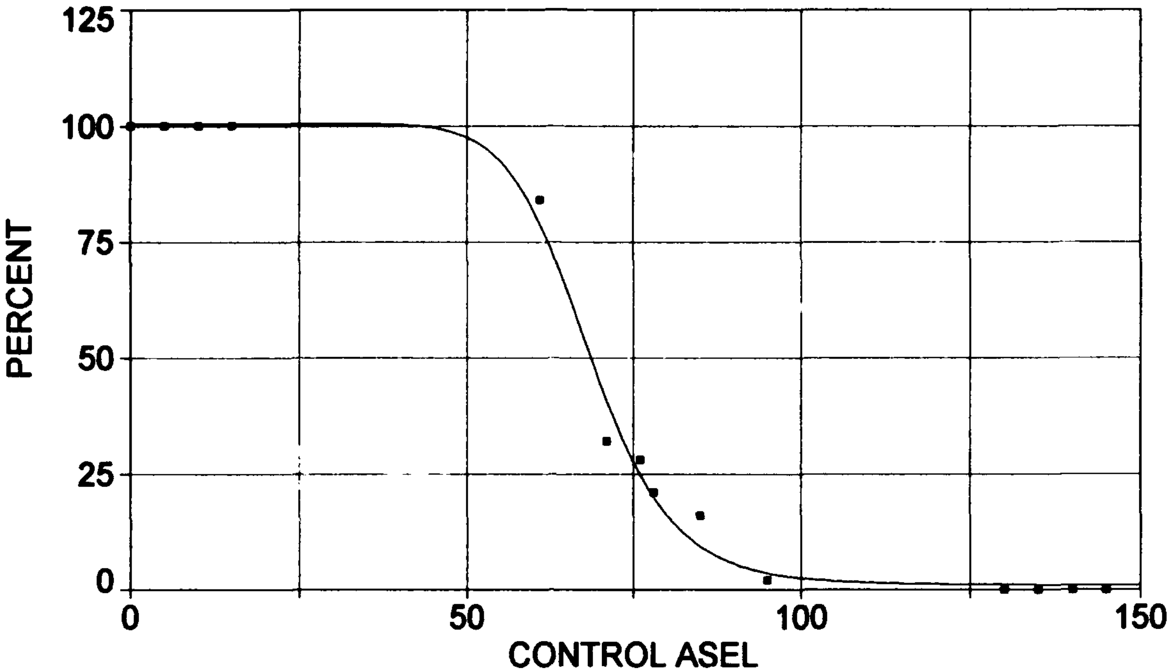
LARGE BLAST, SET 6&7-VEHICLE CONTROLS

Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2=0.993310876 DF Adj r^2=0.990337932 FitStdErr=4.11277658 Fstat=494.988022

a=0.91263447 b=99.600602

c=68.460094 d=11.05152



Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9933108760	0.9903379320	4.1127765762	494.98802229

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	0.912634470	1.903615935	0.479421533	-3.33957460	5.164843545
b	99.60060167	2.839026652	35.08265821	93.25891547	105.9422879
c	68.46009354	0.855364376	80.03617572	66.54942022	70.37076685
d	11.05152033	1.282549155	8.616839585	8.186621454	13.91641921

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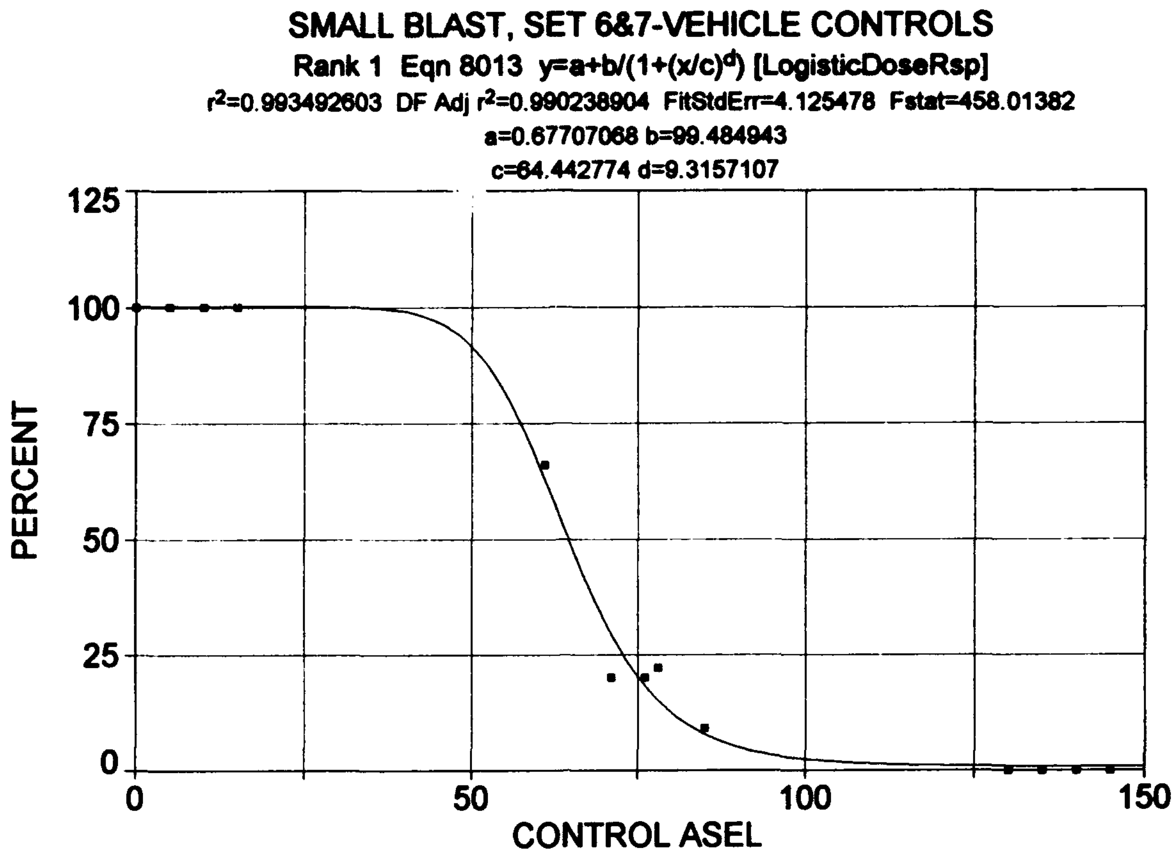
Mar 30, 1994	4:25:49 PM	c:\tcwin\munoh.pm



Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9934926029	0.9902389043	4.1254780034	458.01382018

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	0.677070683	2.050457447	0.330204699	-3.97528978	5.329431152
b	99.48494292	2.921898027	34.04805438	92.85533795	106.1145479
c	64.44277441	1.011714633	63.69659218	62.14725681	66.73829202
d	9.315710682	1.195772562	7.790537244	6.602577080	12.02884428

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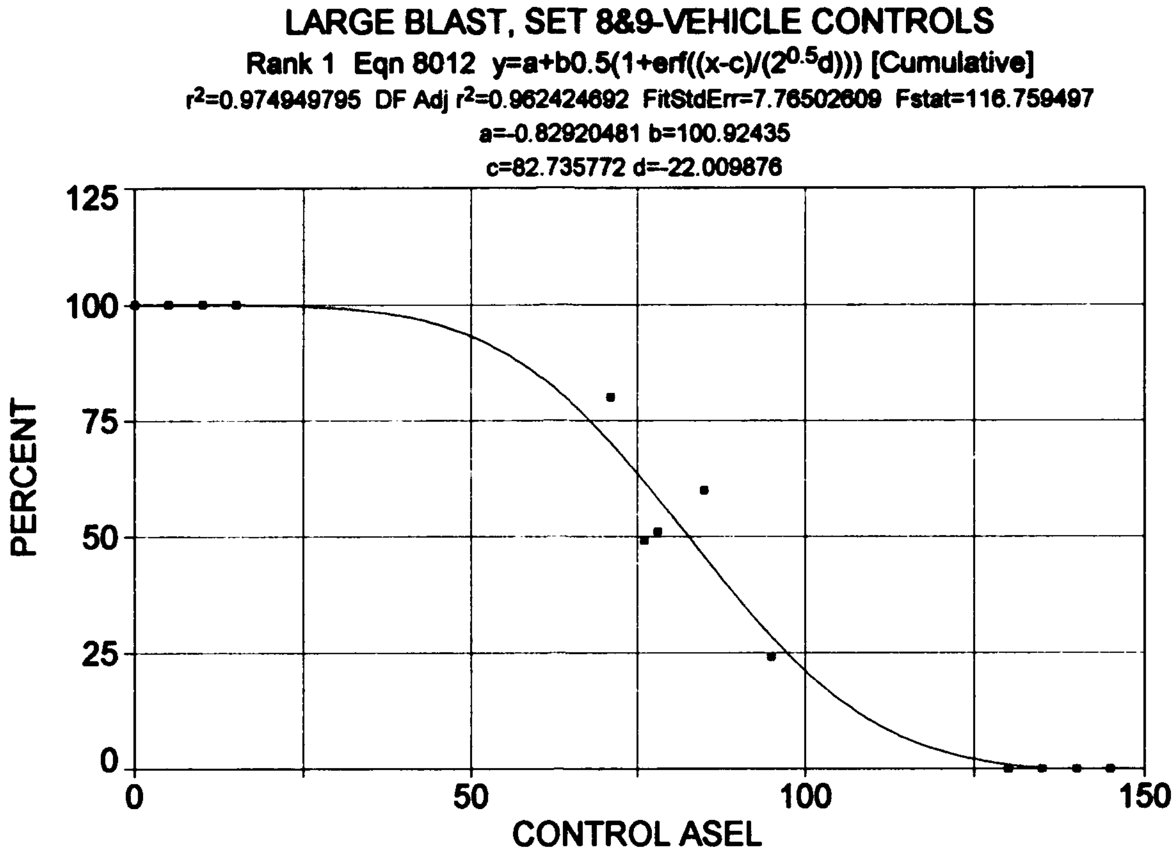
Mar 30, 1994	4:21:38 PM	c:\tcwin\munoh.prn

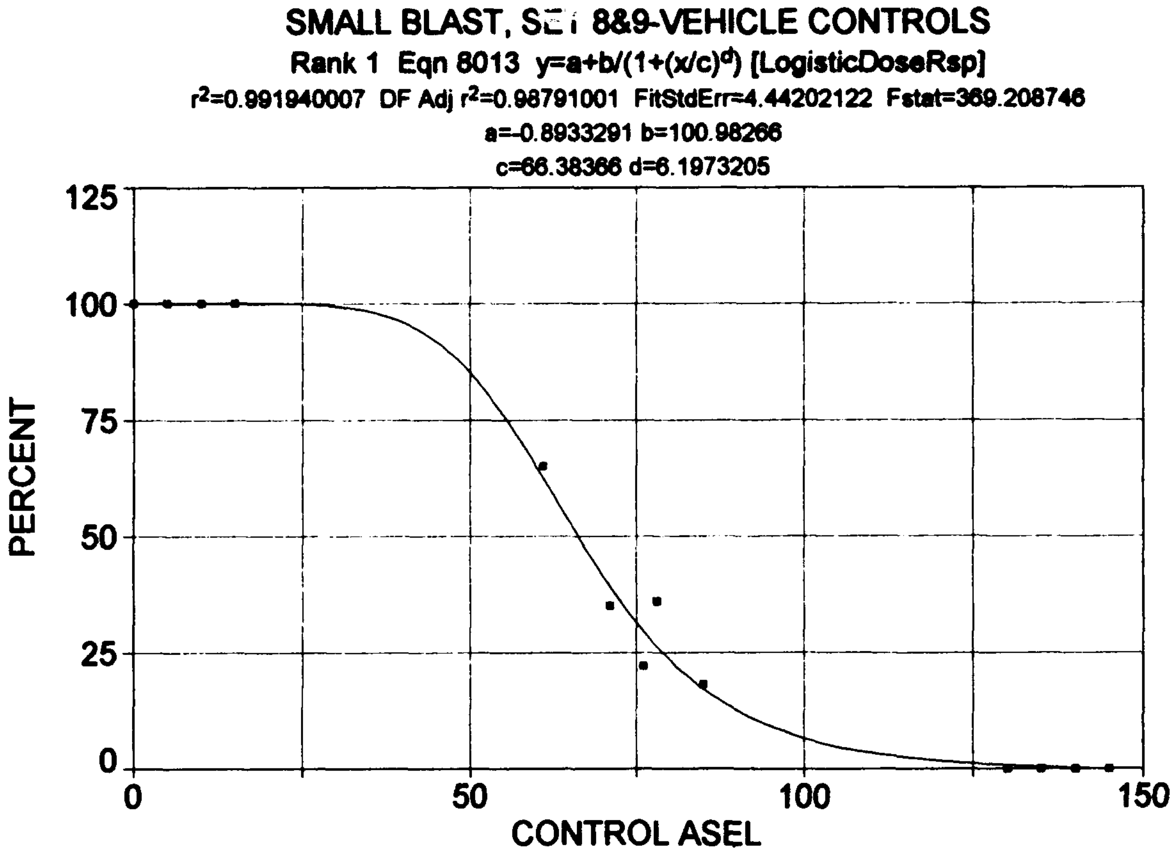


Rank 1 Eqn 8012 $y=a+b0.5(1+erf((x-c)/(2^{0.5}d)))$ [Cumulative]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9749497947	0.9624246920	7.7650260893	116.75949731

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	-0.82920481	4.502934530	-0.18414765	-11.0460833	9.387673689
b	100.9243506	6.096113804	16.55552272	87.09264734	114.7560538
c	82.73577169	2.817121508	29.36890421	76.34389814	89.12764525
d	-22.0098760	6.163278451	-3.57113121	-35.9939716	-8.02578038

Date	Time	File Source
Mar 30, 1994	2:24:53 PM	c:\tcwin\munoh.prn



Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9919400067	0.9879100101	4.4420212153	369.20874631

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	-0.89332910	2.603275274	-0.34315583	-6.79999885	5.013340651
b	100.9826643	3.471163070	29.09188140	93.10681113	108.8585175
c	66.38365993	1.408211927	47.14039033	63.18851462	69.57880525
d	6.197320520	0.994580642	6.231089021	3.940678877	8.453962163

Date	Time	File Source
Mar 30, 1994	2:50:47 PM	c:\tcwin\munoh.prn

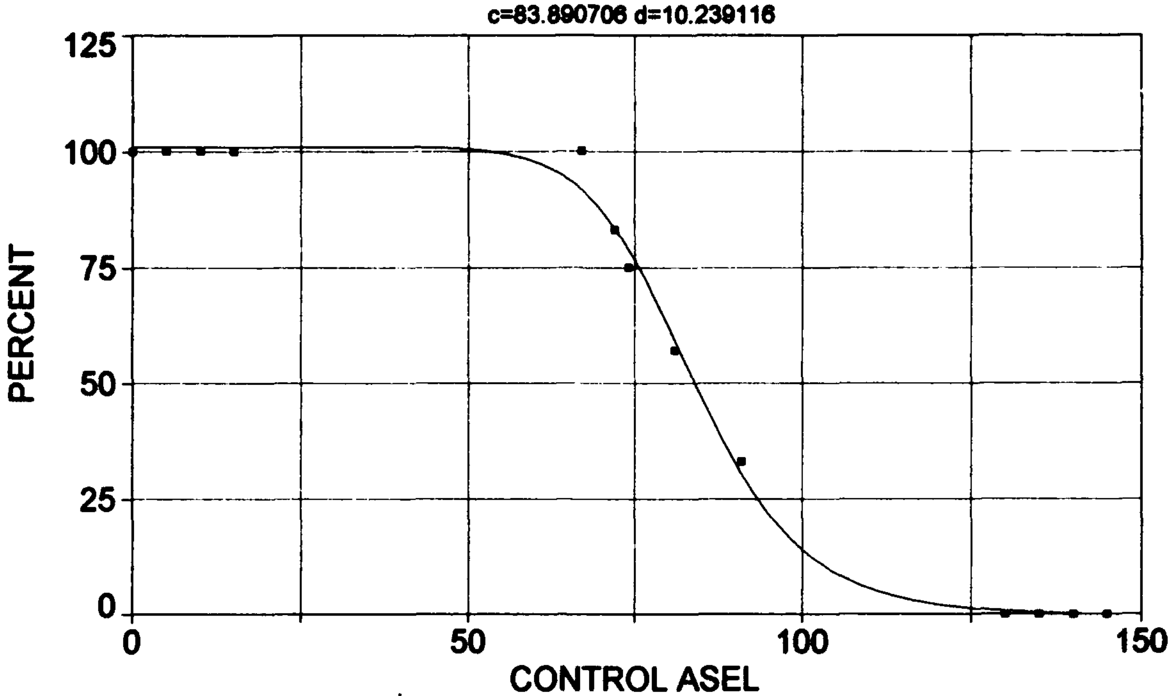
LARGE BLAST, SET 7-VEHICLE CONTROLS

Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2=0.9957572 DF Adj r^2=0.9936358 FitStdErr=3.35053521 Fstat=704.080228

a=-0.48800498 b=101.40596

c=83.890706 d=10.239116



Rank 1 Eqn 8013 $y=a+b/(1+(x/c)^d)$ [LogisticDoseRsp]

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9957572000	0.9936358000	3.3505352104	704.08022822

Parm	Value	Std Error	t-value	95% Confidence Limits	
a	-0.48800498	1.798771470	-0.27129904	-4.56930561	3.593295654
b	101.4059639	2.517143346	40.28612994	95.69472214	107.1172057
c	83.89070588	0.902932806	92.90913491	81.84200748	85.93940428
d	10.23911578	0.999263872	10.24665863	7.971848176	12.50638338

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